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=> fil hcap
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FILE COVERS 1907 - 6 Feb 2009  VOL 150 ISS 7
FILE LAST UPDATED: 5 Feb 2009  (20090205/ED)

HCAplus now includes complete International Patent Classification (IPC)
reclassification data for the third quarter of 2008.

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This file contains CAS Registry Numbers for easy and accurate
substance identification.

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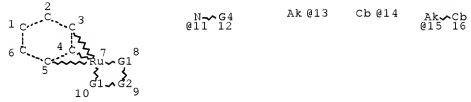


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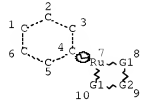

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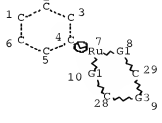

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DEFAULT ECLEVEL IS LIMITED

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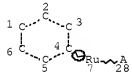


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RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS   8

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=> d l28 ibib abs hitind hitstr tot

L28  ANSWER 1 OF 34  HCAPLUS  COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER:         2008:990607  HCAPLUS  Full-text
DOCUMENT NUMBER:          149:346713
TITLE:                    Cytotoxicity, Cellular Uptake, and DNA Interactions of
                          New Monodentate Ruthenium(II) Complexes Containing
                          Terphenyl Arenes
AUTHOR(S):                Bugarcic, Tijana; Novakova, Olga; Halamikova, Anna;
                          Zerzankova, Lenka; Vrana, Oldrich; Kasparkova, Jana;
```

Habtemariam, Abraha; Parsons, Simon; Sadler, Peter J.; Brabec, Viktor
CORPORATE SOURCE: School of Chemistry, University of Edinburgh, Edinburgh, EH9 3JJ, UK
SOURCE: Journal of Medicinal Chemistry (2008), 51(17), 5310-5319
CODEN: JMCMAR; ISSN: 0022-2623
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB We have compared the cancer cell cytotoxicity, cell uptake, and DNA binding properties of the isomeric terphenyl complexes [(η6-arene)Ru(en)Cl]+, where the arene is ortho- (2), meta- (3), or para-terphenyl (1) (o-, m-, or p-terp). Complex 1, the X-ray crystal structure of which confirms that it has the classical "piano-stool" geometry, has a similar potency to cisplatin but is not cross-resistant and has a much higher activity than 2 or 3. The extent of Ru uptake into A2780 or A2780cis cells does not correlate with potency. Complex 1 binds to DNA rapidly and quant., preferentially to guanine residues, and causes significant DNA unwinding. Circular and linear dichroism, competitive binding expts. with ethidium bromide, DNA melting, and surface-enhanced Raman spectroscopic data are consistent with combined intercalative and monofunctional (coordination) binding mode of complex 1. This unusual DNA binding mode may therefore make a major contribution to the high potency of complex 1.
CC 1-3 (Pharmacology)
IT Antitumor agents
Bond angle
Bond length
Crystal structure
Neoplasm
Pharmacokinetics
Structure-activity relationship
(cytotoxicity, uptake, and DNA interactions of monodentate Ru(II) complexes containing terphenyl arenes)
IT Antitumor agents
(resistance to; cytotoxicity, uptake, and DNA interactions of monodentate Ru(II) complexes containing terphenyl arenes)
IT 915952-51-1P 1056372-99-6P 1056373-09-1P
RL: DMA (Drug mechanism of action); PAC (Pharmacological activity); PKT (Pharmacokinetics); PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(cytotoxicity, uptake, and DNA interactions of monodentate Ru(II) complexes containing terphenyl arenes)
IT 915952-51-1P 1056372-99-6P 1056373-09-1P
RL: DMA (Drug mechanism of action); PAC (Pharmacological activity); PKT (Pharmacokinetics); PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(cytotoxicity, uptake, and DNA interactions of monodentate Ru(II) complexes containing terphenyl arenes)
RN 915952-51-1 HCAPLUS
CN Ruthenium(1+), chloro(1,2-ethanediamine-κN1,κN2)[(1',2',3',4',5',6'-η)-1,1':2',1''-terphenyl]-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

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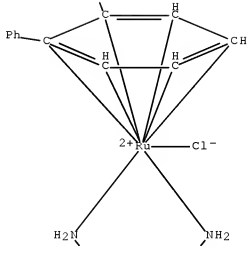
CRN 915952-50-0
CMF C20 H22 Cl N2 Ru

CCI CCS

PAGE 1-A

PAGE 2-A



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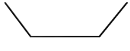

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CRN 16919-18-9
CMF F6 P
CCI CCS

RN 1056372-99-6 HCAPLUS
CN Ruthenium, chloro(1,2-ethanediamine-κN1,κN2)[(1,2,3,4,5,6-η)-1,1':4',1''-terphenyl]-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

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CRN 1056372-98-5
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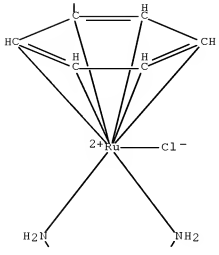
CCI CCS

PAGE 1-A

PAGE 2-A



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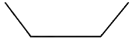

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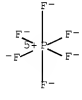


RN 1056373-09-1 HCAPLUS
CN Ruthenium, chloro(1,2-ethanediamine-
κN1,κN2)[(1',2',3',4',5',6'-η)-1,1':3',1''-terphenyl]-,
hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

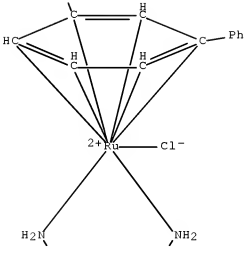
CM 1

CRN 1056373-08-0

CMF C20 H22 Cl N2 Ru
CCI CCS

PAGE 1-A

PAGE 2-A



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CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

REFERENCE COUNT: 49 THERE ARE 49 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L28 ANSWER 2 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2008:885550 HCAPLUS Full-text
DOCUMENT NUMBER: 149:301516
TITLE: DNA Structural Distortions Induced by Ruthenium-Arene Anticancer Compounds
AUTHOR(S): Gossens, Christian; Tavernelli, Ivano; Rothlisberger, Ursula
CORPORATE SOURCE: Laboratory of Computational Chemistry and Biochemistry, Institute of Chemical Sciences and Engineering, Ecole Polytechnique Federale de Lausanne, Lausanne, CH-1015, Switz.
SOURCE: Journal of the American Chemical Society (2008), 130(33), 10921-10928
CODEN: JACSAT; ISSN: 0002-7863
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Organometallic ruthenium(II)-arene (RA) compds. combine a rich structural diversity with the potential to overcome existing chemotherapeutic limitations. In particular, the two classes of compds. [Ru(II)(η6-arene)X(en)] and [Ru(II)(η6-arene)(X)2(pta)] (RA-en and RA-pta, resp.; X = leaving group, en = ethylenediamine, pta = 1,3,5-triaza-7-phosphaadamantane) have become the focus of recent anticancer research. In vitro and in vivo studies have shown that they exhibit promising new activity profiles, for which their interactions with DNA are suspected to be a crucial factor. In the present study, we investigate the binding processes of monofunctional RA-en and bifunctional RA-pta to double-stranded DNA and characterize the resulting structural perturbations by means of ab initio and classical mol. dynamics simulations. We find that both RA complexes bind easily through their ruthenium center to the N7 atom of guanine bases. The high flexibility of DNA allows for fast accommodation of the ruthenium complexes into the major groove. Once bound to the host, however, the two complexes induce different DNA structural distortions. Strain induced in the DNA backbone from RA-en complexation is released by a local break of a Watson-Crick base-pair, consistent with the exptl. observed local denaturation. The bulkier RA-pta,

on the other hand, bends the DNA helix toward its major groove, resembling the characteristic DNA distortion induced by the classic anticancer drug cisplatin. The atomistic details of the interactions of RA complexes with DNA gained in the present study shed light on some of the anticancer properties of these compds. and should assist future rational compound design.

CC 6-2 (General Biochemistry)
Section cross-reference(s): 1, 67

IT 488127-65-7 1050446-34-8
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(DNA structural distortions induced by ruthenium-arene anticancer compds.)

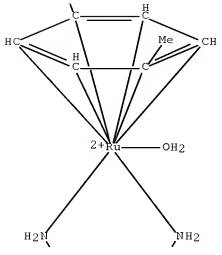
IT 488127-65-7
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(DNA structural distortions induced by ruthenium-arene anticancer compds.)

RN 488127-65-7 HCAPLUS

CN Ruthenium(2+), aqua(1,2-ethanediamine-κN1,κN2)[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]- (CA INDEX NAME)

PAGE 1-A

PAGE 2-A



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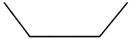

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L28 ANSWER 3 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2008:646203 HCAPLUS Full-text
DOCUMENT NUMBER: 149:176443
TITLE: The "complex-in-a-complex" cations [(acac)2M⊂Ru6-(p-iPrC6H4Me)6(tpt)2(dhbq)3]6+: a trojan horse for cancer cells
AUTHOR(S): Therrien, Bruno; Suess-Fink, Georg; Govindaswamy, Padavattan; Renfrew, Anna K.; Dyson, Paul J.
CORPORATE SOURCE: Institut de Chimie, Universite de Neuchatel, Neuchatel, 158, 2009, Switz.
SOURCE: Angewandte Chemie, International Edition (2008), 47(20), 3773-3776
CODEN: ACIEF5; ISSN: 1433-7851
PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The cytotoxicities of the large cationic arene-ruthenium prismatic cage [Ru6(p-iPrC6H4Me)6(tpt)2(dhbq)3]6+ (tpt = 2,4,6-tris(pyridin-4-yl)-1,3,5-triazine, dhbq = 2,5-dihydroxy-1,4-benzoquinolato; 16+), and its "complex-in-a-complex" derivs. [(acac)2M-1]6+ (M = Pd, Pt; acac = acetylacetonate), are evaluated in comparison with free [M(acac)2]. The differences in cytotoxicity suggest that, like a "Trojan Horse", leaching of the guest from the cage once inside a cell accelerates and increases the cytotoxic effect.

CC 29-13 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 1, 75
IT 1039768-31-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and antitumor activity of palladium and platinum acetylacetonate hydroxyquinolato bridged cymene ruthenium binuclear complex-in-a-complex cations)
IT 1039768-31-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and antitumor activity of palladium and platinum acetylacetonate hydroxyquinolato bridged cymene ruthenium binuclear complex-in-a-complex cations)
RN 1039768-31-4 HCAPLUS
CN Ruthenium, dichloro[μ-[2,5-di(hydroxy-κO)-2,5-cyclohexadiene-1,4-dionato(2-)-κO1:κO4]]bis[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]di- (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
REFERENCE COUNT: 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L28 ANSWER 4 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2008:558406 HCAPLUS Full-text
DOCUMENT NUMBER: 149:32407
TITLE: Influence of the Spacer Length on the in Vitro Anticancer Activity of Dinuclear Ruthenium-Arene Compounds
AUTHOR(S): Mendoza-Ferri, Maria-Grazia; Hartinger, Christian G.; Eichinger, Rene E.; Stolyarova, Natalya; Severin, Kay; Jakupec, Michael A.; Nazarov, Alexey A.; Keppler, Bernhard K.
CORPORATE SOURCE: Institute of Inorganic Chemistry, University of Vienna, Vienna, A-1090, Austria
SOURCE: Organometallics (2008), 27(11), 2405-2407
CODEN: ORGND7; ISSN: 0276-7333
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 149:32407
AB Water-soluble dinuclear Ru-arene complexes were synthesized and found to exert promising cytotoxic effects in human cancer cells, which could be increased to an IC50 of 0.29 μM by increasing the spacer length between the metal centers. Cytotoxicity could be correlated with lipophilicity (log P values) and water solubility The most potent dinuclear compound, 1,12-bis{chlorido[3-(oxo-κO)-2-methyl-4-pyridinonato- κO4](η6-p-isopropyltoluene)ruthenium}dodecane, is at least 2-3 orders of magnitude more active than the mononuclear analog chlorido[3-(oxo-κO)-2-methyl-4-pyronato-κO4](η6-p- isopropyltoluene)ruthenium.
CC 29-13 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 1, 75
IT Antitumor agents
Human
Neoplasm
(preparation and spacer length effect on in vitro anticancer activity of dinuclear ruthenium-arene compds.)
IT 103061-76-5P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(crystal structure; preparation and spacer length effect on in vitro

anticancer activity of dinuclear ruthenium-arene compds.)

IT 1016583-06-4P

RL: BSU (Biological study, unclassified); PAC (Pharmacological activity); PRP (Properties); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)

(mol. structure; preparation and spacer length effect on in vitro anticancer activity of dinuclear ruthenium-arene compds.)

IT 1016582-98-1P 1016583-14-4P

RL: BSU (Biological study, unclassified); PAC (Pharmacological activity); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)

(preparation and spacer length effect on in vitro anticancer activity of dinuclear ruthenium-arene compds.)

IT 1030617-76-5P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(crystal structure; preparation and spacer length effect on in vitro anticancer activity of dinuclear ruthenium-arene compds.)

RN 1030617-76-5 HCAPLUS

CN Ruthenium, dichloro[μ-[[1,1'-(1,6-hexanediyl)bis[3-(hydroxy-κO)-2-methyl-4(1H)-pyridinonato-κO4]](2-)]]bis[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]di-, compd. with trichloromethane (1:2) (CA INDEX NAME)

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CRN 1016583-06-4
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CCI CCS

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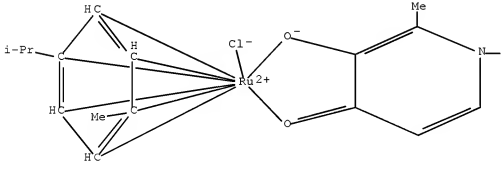

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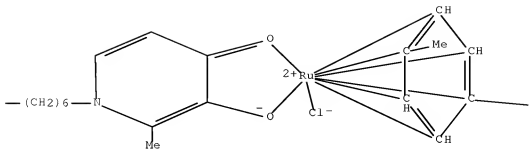


PAGE 1-C

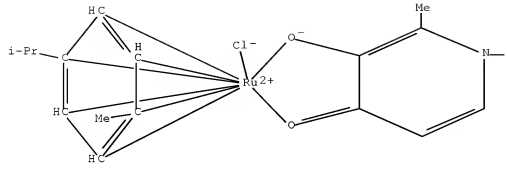
—Pr-i

CM 2

CRN 67-66-3
CMF C H Cl3

IT 1016583-06-4P
RL: BSU (Biological study, unclassified); PAC (Pharmacological activity); PRP (Properties); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(mol. structure; preparation and spacer length effect on in vitro anticancer activity of dinuclear ruthenium-arene compds.)
RN 1016583-06-4 HCAPLUS
CN Ruthenium, dichloro[μ-[[1,1'-(1,6-hexanediyl)bis[3-(hydroxy-κO)-2-methyl-4(1H)-pyridinonato-κO4]]](2-)]bis[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]di- (CA INDEX NAME)

PAGE 1-A



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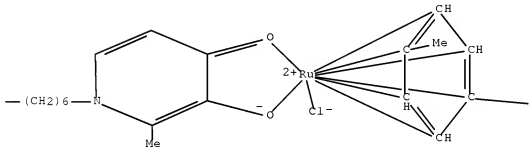

PAGE 1-C

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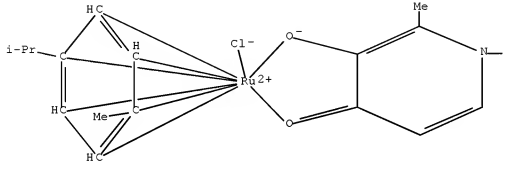
IT 1016582-98-1P 1016583-14-4P
RL: BSU (Biological study, unclassified); PAC (Pharmacological activity); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(preparation and spacer length effect on in vitro anticancer activity of dinuclear ruthenium-arene compds.)

RN 1016582-98-1 HCAPLUS
CN Ruthenium, dichlorobis[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene][μ-[[1,1'-(1,3-propanediyl)bis[3-(hydroxy-κO)-2-methyl-4(1H)-pyridinonato-κO4]]](2-)]di- (CA INDEX NAME)

PAGE 1-A



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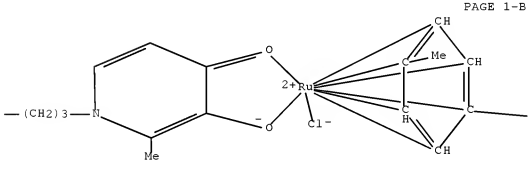


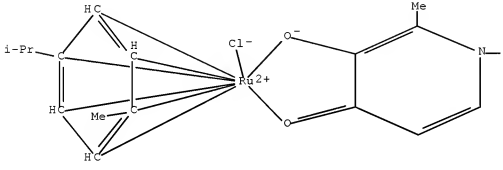
PAGE 1-C

—Pr-i

RN 1016583-14-4 HCAPLUS

CN Ruthenium, dichloro[μ-[1,1'-(1,12-dodecanediyl)bis[3-(hydroxy-κO)-2-methyl-4(1H)-pyridinonato(2-)-κO4]]]bis[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]di- (CA INDEX NAME)

PAGE 1-A



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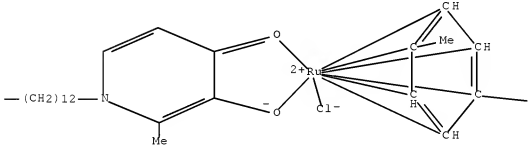


PAGE 1-C

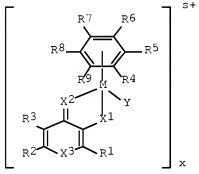
—Pr-i

REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L28 ANSWER 5 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2008:486249 HCAPLUS Full-text
DOCUMENT NUMBER: 148:403366
TITLE: Half-sandwich ruthenium and osmium arene complexes as anti-tumor agents and process for preparation thereof
PATENT ASSIGNEE(S): Faustus Forschung Translational Drug Development AG, Austria
SOURCE: Austrian Pat. Appl. [Pre-Grant], 46pp.
CODEN: ATXXAD
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
AT 503733	A1	20071215	AT 2006-1003	20060613
PRIORITY APPLN. INFO.:			AT 2006-1003	20060613
OTHER SOURCE(S):	MARPAT 148:403366			

GI



I

AB Arene complexes I·(Zq-)sm/q [1, R1-R9 = H, halo, OH, CO2H, NO2, amino, (cyclo)alkyl, (cyclo)alkenyl, alkynyl, aryl, aralkyl; X1, X2 = N, O, S; X3 = O, S, C1-100-organylimino; Y = anionic or neutral N-heterocycle, H2O, DMSO, phosphine, P-glucofuranoside, preferably Y = Cl, Br; Z = pharmaceutically acceptable counterion, preferably Z = (pseudo)halogenide, NO3-, BO33-, PF6-, carboxylate, SO42-, HPO32-; M = Ru, Os; m = 1-4, when m = 2-4, the monomer units are bound through R1-R3, X3; q = 1-3, s = 0-2], [[(η6-arene)MY2(PO3Q)]s+]m·(Zq-)sm/q (2, arene = R4R5R6R7R8R9C6, Q = 3,5,6-O-glucofuranosyl; same R, Z, Y), [[(η6-arene)MYQ1]s+]m·(Zq-)sm/q (3, Q1 = 8-quinolinolato, same arene, Y), useful as antitumor agents, were prepared by complexation of the corresponding dimers [(η6-arene)2M2(μ-X)2X2] (4, same arene, M; X = halo) with the corresponding ligands. The compds. 1-3 may be administered in 0.1-5 mg/kg doses, preferably in 1-3 mg/kg doses, preferably

i.v., for treatment or prophylaxis of cancer. In an example, the compound I [1d, R4 = Me, R7 = iPr, Y = Cl, M = Ru, R1 = Me, R2 = R3 = R5 = R6 = R8 = R9 = H; X1 = X2 = O, X3 = 1/2 N(CH2)12N] was prepared by reaction of 0.12 mmol of [(η6-p-cymene)RuCl]2 with 0.14 mmol of 1,12-bis[3-hydroxy-2-methyl-4(1H)-pyridinon-1-yl]dodecane in 10 mL of methanol. In another example, the compound 1d exhibited 50% inhibition of growth of human colon adenocarcinoma cells (SW480) in 0.29 μM concentration

CC 29-13 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 1, 33

IT Antitumor agents
(organometallic; preparation and cytostatic activity of ruthenium and osmium half-sandwich arene pyridinolate, quinolinolate and P-glucofuranosyl phosphite antitumor agents)

IT 1016582-96-1P 1016583-06-4P 1016583-10-0P
1016583-14-4P 1016583-18-8P
RL: BSU (Biological study, unclassified); PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation and cytostatic activity of ruthenium and osmium half-sandwich arene pyridinolate, quinolinolate and P-glucofuranosyl phosphite antitumor agents)

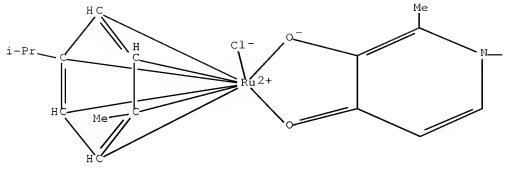
IT 1016583-02-0P 1016583-22-4P 1016583-26-8P 1016583-30-4P
1016583-37-1P 1016583-42-8P 1016583-47-3P 1016583-52-0P
1016583-56-4P 1016583-61-1P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation and cytostatic activity of ruthenium and osmium half-sandwich arene pyridinolate, quinolinolate and P-glucofuranosyl phosphite antitumor agents)

IT 1016582-98-1P 1016583-06-4P 1016583-10-0P
1016583-14-4P
RL: BSU (Biological study, unclassified); PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation and cytostatic activity of ruthenium and osmium half-sandwich arene pyridinolate, quinolinolate and P-glucofuranosyl phosphite antitumor agents)

RN 1016582-98-1 HCAPLUS

CN Ruthenium, dichlorobis[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene][μ-[[1,1'-(1,3-propanediyl)bis[3-(hydroxy-κO)-2-methyl-4(1H)-pyridinonato-κO4]]](2-)]di- (CA INDEX NAME)

PAGE 1-A



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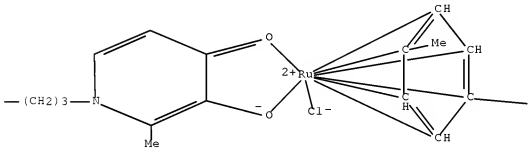


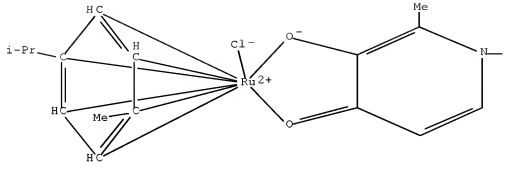
PAGE 1-C

Pr-i

RN 1016583-06-4 HCAPLUS

CN Ruthenium, dichloro[μ-[[1,1'-(1,6-hexanediyl)bis[3-(hydroxy-κO)-2-methyl-4(1H)-pyridinonato-κO4]]](2-)]bis[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]di- (CA INDEX NAME)

PAGE 1-A



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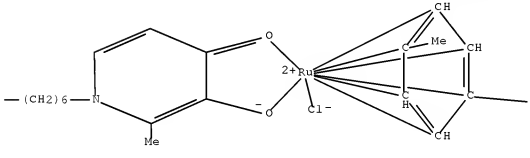
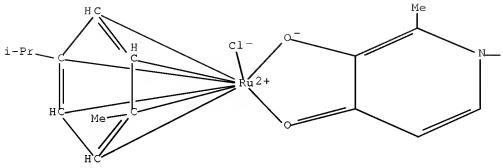


PAGE 1-C

—Pr-i

RN 1016583-10-0 HCAPLUS
CN Ruthenium, dichlorobis[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene][μ-[[1,1'-(1,8-octanediyl)bis[3-(hydroxy-κO)-2-methyl-4(1H)-pyridinonato-κO4]]](2-)]di- (CA INDEX NAME)

PAGE 1-A



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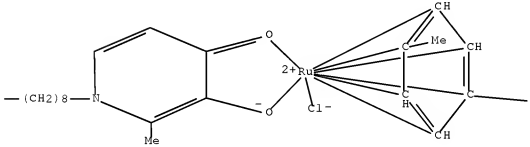


PAGE 1-C

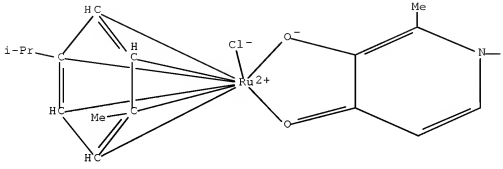
—Pr-i

RN 1016583-14-4 HCAPLUS

CN Ruthenium, dichloro[μ-[1,1'-(1,12-dodecanediyl)bis[3-(hydroxy-κO)-2-methyl-4(1H)-pyridinonato(2-)-κO4]]]bis[(1,2,3,4,5,6-η)-1-

methyl-4-(1-methylethyl)benzene]di- (CA INDEX NAME)

PAGE 1-A



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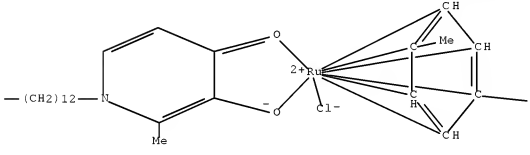


PAGE 1-C

—Pr-i

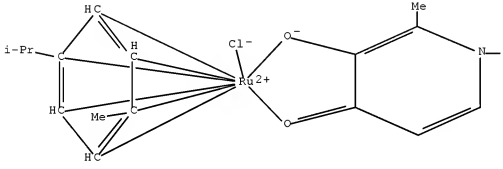
IT 1016583-02-0P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP

(Preparation); USES (Uses)
(preparation and cytostatic activity of ruthenium and osmium half-sandwich arene pyridinolate, quinolinolate and P-glucofuranosyl phosphite antitumor agents)

RN 1016583-02-0 HCAPLUS

CN Ruthenium, [μ-[[1,1'-(1,4-butanediyl)bis[3-(hydroxy-κO)-2-methyl-4(1H)-pyridinonato-κO4]]](2-)]dichlorobis[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]di- (CA INDEX NAME)

PAGE 1-A



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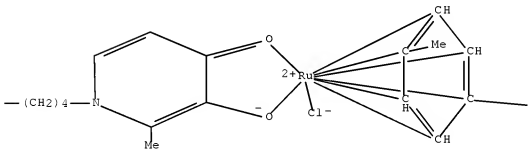


—Pr-i

L28 ANSWER 6 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2008:400130 HCAPLUS Full-text
DOCUMENT NUMBER: 149:39047
TITLE: Identification of Clusters from Reactions of Ruthenium Arene Anticancer Complex with Glutathione Using Nanoscale Liquid Chromatography Fourier Transform Ion Cyclotron Mass Spectrometry Combined with 18O-Labeling
AUTHOR(S): Wang, Fuyi; Weidt, Stefan; Xu, Jingjing; Mackay, C. Logan; Langridge-Smith, Pat R. R.; Sadler, Peter J.
CORPORATE SOURCE: School of Chemistry, University of Edinburgh, Edinburgh, UK
SOURCE: Journal of the American Society for Mass Spectrometry (2008), 19(4), 544-549
CODEN: JAMSEF; ISSN: 1044-0305
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Reactions of the anticancer complex [(η6-bip)Ru(en)Cl]+ (where bip is biphenyl and en is ethylenediamine) with the tripeptide glutathione (γ-L-Glu-L-Cys-Gly; GSH), the abundant intracellular thiol, in aqueous solution give rise to two ruthenium cluster complexes, which could not be identified by electrospray mass spectrometry (ESI-MS) using a quadrupole mass analyzer. Here we use Fourier transform ion cyclotron mass spectrometry (nanoLC-FT-ICR MS) to identify the clusters separated by nanoscale liquid chromatog. as the tetranuclear complex [{(η6-bip)Ru(GSO2)}4]2- (2) and dinuclear complex [{(η6-bip)Ru(GSO2)2}2]8- (3) containing glutathione sulfinate (GSO2) ligands. Use of 18OH2 showed that oxygen from water can readily be incorporated into the oxidized glutathione ligands. These data illustrate the power of high-resolution MS for identifying highly charged multinuclear complexes and elucidating novel reaction pathways for metallodrugs, including ligand-based redox reactions.

CC 64-3 (Pharmaceutical Analysis)
Section cross-reference(s): 29, 63

IT 70-18-8, Reduced glutathione, reactions 336876-16-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(identification of clusters from reactions of ruthenium Arene anticancer complex with glutathione using nanoscale liquid chromatog. Fourier transform ion cyclotron mass spectrometry combined with 18O-labeling)

IT 336876-16-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(identification of clusters from reactions of ruthenium Arene anticancer complex with glutathione using nanoscale liquid chromatog. Fourier transform ion cyclotron mass spectrometry combined with 18O-labeling)

RN 336876-16-5 HCAPLUS

CN Ruthenium(1+), [(1,2,3,4,5,6-η)-1,1'-biphenyl]chloro(1,2-ethanediamine-κN1,κN2)-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

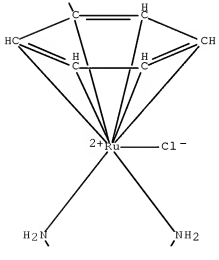
CM 1

CRN 336876-15-4
CMF C14 H18 Cl N2 Ru
CCI CCS

PAGE 1-A

Ph

PAGE 2-A



CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

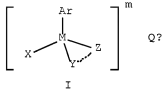
REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L28 ANSWER 7 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2008:191623 HCAPLUS Full-text
DOCUMENT NUMBER: 148:262751
TITLE: Preparation and antitumor activity of organometallic osmium compounds
INVENTOR(S): Sadler, Peter John; Peacock, Anna Frances Acushla; Van Rijt, Sabine Helena; Habtemariam, Abraha
PATENT ASSIGNEE(S): The University of Warwick, UK
SOURCE: PCT Int. Appl., 91pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2008017855	A1	20080214	WO 2007-GB3042	20070810

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,

BY, KG, KZ, MD, RU, TJ, TM
PRIORITY APPLN. INFO.: GB 2006-15957 A 20060811
GB 2007-13593 A 20070712
OTHER SOURCE(S): CASREACT 148:262751; MARPAT 148:262751
GI



I

AB The present invention relates to osmium compds. I (M = Os, dinuclear or polynuclear forms with Os(II), Ar = arene; X = halo, donor ligand; Y---Z = bidentate ligand optionally linked to arene, dashed line represents a group of atoms linking Y and Z; Y, Z = O, N, S; Q = ion present or absent; m, n = charges pos. or neg. whole number), their preparation and use in methods of treatment, particularly for cancer treatment. Thus, reaction of [(η6-bip)OsCl2]2 (bip = biphenyl) with 6-bromopicolinic acid in MeOH in the presence of NaOMe gave 63% title compound, [(η6-bip)Os(6-Br-pico)Cl].

CC 29-13 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 1, 75

IT Acidity
Antitumor agents
Cytotoxic agents
Hydrolysis
Neoplasm
Reaction kinetics
(preparation and antitumor activity of organometallic osmium compds.)

IT 128642-48-8 154090-32-1 159284-20-5 303143-35-3
336876-16-5 386722-46-9 850246-65-0
915952-85-1 915952-93-1 934755-73-4 934755-75-6 934755-76-7
937035-53-5 937035-54-6 940302-45-4 940302-47-6
1006886-25-4 1006886-32-3 1006886-34-5 1006886-43-6
1006886-44-7 1006899-91-7 1006899-92-8
RL: BSU (Biological study, unclassified); PAC (Pharmacological activity); RCT (Reactant); THU (Therapeutic use); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)
(preparation and antitumor activity of organometallic osmium compds.)

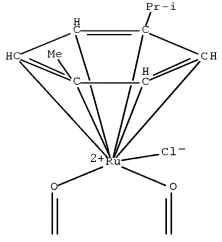
IT 128642-48-8 336876-16-5 386722-46-9
850246-65-0 937035-54-6 1006886-43-6
1006886-44-7 1006899-92-8
RL: BSU (Biological study, unclassified); PAC (Pharmacological activity); RCT (Reactant); THU (Therapeutic use); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)
(preparation and antitumor activity of organometallic osmium compds.)

RN 128642-48-8 HCAPLUS

CN Ruthenium, chloro[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene](2,4-pentanedionato-κO1,κO4)- (CA INDEX

NAME)

PAGE 1-A



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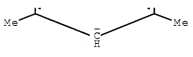


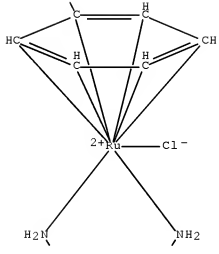
RN 336876-16-5 HCAPLUS
CN Ruthenium(1+), [(1,2,3,4,5,6-η)-1,1'-biphenyl]chloro(1,2-ethanediamine-κN1,κN2)-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 336876-15-4
CMF C14 H18 Cl N2 Ru
CCI CCS

PAGE 1-A

PAGE 2-A



PAGE 3-A

CM 2

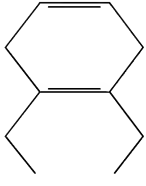
CRN 16919-18-9
CMF F6 P
CCI CCS

RN 386722-46-9 HCAPLUS
CN Ruthenium(1+), chloro(1,2-ethanediamine-κN1,κN2)[(5,6,7,8,8a,10a-η)-1,4,9,10-tetrahydroanthracene]-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 386722-45-8
CMF C16 H22 Cl N2 Ru
CCI CCS

PAGE 1-A



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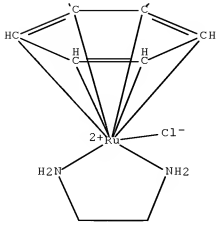


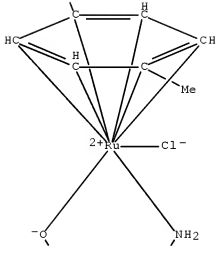
CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

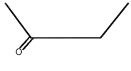
RN 850246-65-0 HCAPLUS
CN Ruthenium, chloro(glycinato-κN,κO)[(1,2,3,4,5,6-η)-1-(1-methylethyl)-4-methylbenzene]- (CA INDEX NAME)

PAGE 1-A

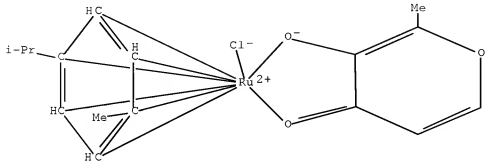
PAGE 2-A



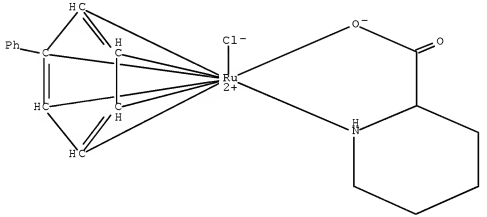
PAGE 3-A



RN 937035-54-6 HCAPLUS
CN Ruthenium, chloro[3-(hydroxy-κO)-2-methyl-4H-pyran-4-onato-κO4][(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]- (CA INDEX NAME)

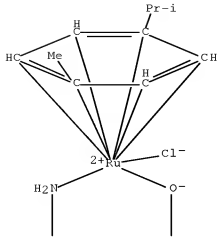


RN 1006886-43-6 HCAPLUS
CN Ruthenium, [(1,2,3,4,5,6-η)-1,1'-biphenyl]chloro(2-piperidinecarboxylato-κN1,κO2)- (CA INDEX NAME)



RN 1006886-44-7 HCAPLUS
CN Ruthenium, (β-alaninato-κN,κO)chloro[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]- (CA INDEX NAME)

PAGE 1-A



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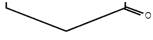
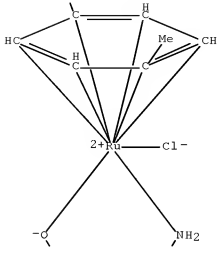


RN 1006899-92-8 HCAPLUS

CN Ruthenium, (alaninato-κN,κO)chloro[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]- (CA INDEX NAME)

PAGE 1-A

PAGE 2-A



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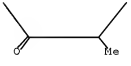


REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L28 ANSWER 8 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2007:1232549 HCAPLUS Full-text
DOCUMENT NUMBER: 148:95416
TITLE: 106Ru radiolabelling of the antitumour complex [(η6-fluorene)Ru(en)Cl]PF6
AUTHOR(S): Hoeschele, James D.; Habtemariam, Abraha; Muir, Jeanette; Sadler, Peter J.
CORPORATE SOURCE: Chemistry Department, Michigan State University, E. Lansing, MI, 48824-1322, USA
SOURCE: Dalton Transactions (2007), (43), 4974-4979
CODEN: DTARAF; ISSN: 1477-9226
PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 148:95416

AB The organometallic half-sandwich RuII arene anticancer complex [(η6-fluorene)Ru(en)Cl]PF6 (1) has been synthesized in high yield and purity on a micromole scale with incorporation of the β-emitting radioisotope 106Ru (half-life = 1.01 y) using a refined procedure involving conversion of RuCl3 into

[(η6-fluorene)RuCl2]2, and then [(η6-fluorene)Ru(CH3CN)2Cl]PF6 as intermediates. Distribution studies 0.25 h post i.v. injection of 106Ru-1 at a dose of 25 mg 1 kg-1 show that 106Ru is well distributed throughout the tissues of a rat. This appears to be the first report of the radiolabelling of a potential ruthenium antitumor agent for distribution/biol. studies.

CC 8-9 (Radiation Biochemistry)

IT Antitumor agents
Neoplasm
Radiopharmaceuticals
Radiotherapy
(106Ru radiolabelling of antitumor complex [(η6-fluorene)Ru(en)Cl]PF6)

IT 1000170-76-2P
RL: PKT (Pharmacokinetics); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(106Ru radiolabelling of antitumor complex [(η6-fluorene)Ru(en)Cl]PF6)

IT 168698-77-9P 915952-57-7P 915953-04-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(106Ru radiolabelling of antitumor complex [(η6-fluorene)Ru(en)Cl]PF6)

IT 1000170-76-2P
RL: PKT (Pharmacokinetics); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(106Ru radiolabelling of antitumor complex [(η6-fluorene)Ru(en)Cl]PF6)

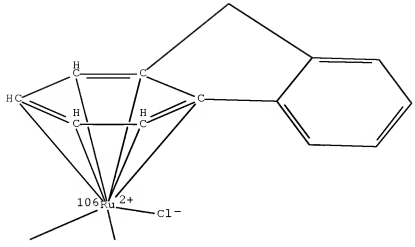
RN 1000170-76-2 HCAPLUS

CN Ruthenium(1+)-106Ru, chloro(1,2-ethanediamine-κN1,κN2)[(1,2,3,4,4a,9a-η)-9H-fluorene]-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 1000170-75-1
CMF C15 H18 Cl N2 Ru
CCI CCS

PAGE 1-A



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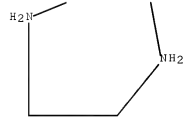


CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

IT 915952-57-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(106Ru radiolabelling of antitumor complex
[(η6-fluorene)Ru(en)Cl]PF6)

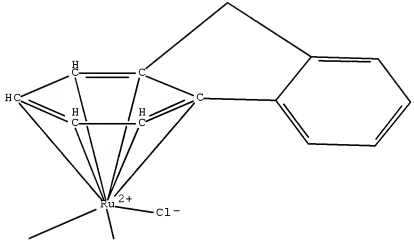
RN 915952-57-7 HCAPLUS

CN Ruthenium(1+), chloro(1,2-ethanediamine-κN1,κN2)[(1,2,3,4,4a,9a-η)-9H-fluorene]-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 915952-56-6
CMF C15 H18 Cl N2 Ru
CCI CCS

PAGE 1-A



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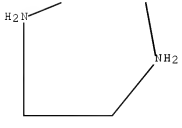


CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L28 ANSWER 9 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2007:809133 HCAPLUS Full-text
DOCUMENT NUMBER: 149:378858
TITLE: Synthesis of cycloruthenated compounds as potential anticancer agents
AUTHOR(S): Leyva, Lida; Sirlin, Claude; Rubio, Laura; Franco, Cecilia; Le Lagadec, Ronan; Spencer, John; Bischoff, Pierre; Gaiddon, Christian; Loeffler, Jean-Philippe; Pfeffer, Michel
CORPORATE SOURCE: Institut de Chimie de Strasbourg, CNRS - Universite Louis Pasteur, Strasbourg, 67000, Fr.
SOURCE: European Journal of Inorganic Chemistry (2007), (19), 3055-3066
CODEN: EJICFO; ISSN: 1434-1948
PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A library of 19 cycloruthenated derivs. is constructed by making use of a known cyclometalation reaction. Their structures are modified in a straightforward manner by addition of either mono- or bidentate ligands, such as bipyridine, 1,10-phenanthroline (phen), 1,2-bis(diphenylphosphino)ethane (dppe), dimethylphenylphosphine, PPh3 and 1,3,5-triaza-7-phosphatricyclo[3.3.1.1]decane (PTA) ligands, to cationic cycloruthenated centers. The antitumor properties of the compds. thus obtained were studied to compare them with recently reported Ru complexes and cisplatin. IC50 values against mammalian cells (A-172, HCT-116, and RDM-4) are determined for the library compds. and some of them, such as those derived from orthoruthenated phenylpyridine ([Ru(C6H4-2-C5H4N)(PMe2Ph)(NCMe)3]PF6 (6), trans-[Ru(C6H4-2-C5H4N)(PPh3)2(NCMe)2]PF6 (9), cis-[Ru(C6H4-2-C5H4N)(dppe)(NCMe)2]PF6 (10), cis-[Ru(C6H4-2-C5H4N)(phen)(MeCN)2]PF6 (11)) and a bidentate N,N ligand ([Ru(C6H4-2-C5H4N)(4,4'-diMe-2,2'-bipy)(NCMe)2]PF6 (12, 4,4'-diMe-2,2'-bipy = 4,4'-dimethyl-2,2'-bipyridine)), display activity of the same order of magnitude as cisplatin.

CC 29-13 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 1, 75

IT Adenocarcinoma
Antitumor agents
Human
Lymphoma
Solubility
Stereoselective synthesis
(preparation, structures and antitumor properties of cycloruthenated complexes)

IT 336876-05-2 388500-38-7 827627-15-6 827627-21-4
827627-34-9 827627-38-3 1009608-72-3 1059185-10-2

RL: PAC (Pharmacological activity); BIOL (Biological study)
(preparation, structures and antitumor properties of
cycloruthenated complexes)

IT 336876-05-2
RL: PAC (Pharmacological activity); BIOL (Biological study)
(preparation, structures and antitumor properties of
cycloruthenated complexes)

RN 336876-05-2 HCAPLUS

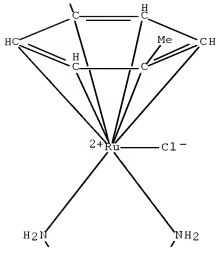
CN Ruthenium(1+), chloro(1,2-ethanediamine-κN1,κN2)[(1,2,3,4,5,6-
η)-1-methyl-4-(1-methylethyl)benzene]-, hexafluorophosphate(1-) (1:1)
(CA INDEX NAME)

CM 1

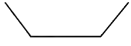
CRN 65684-77-7
CMF C12 H22 Cl N2 Ru
CCI CCS

PAGE 1-A

PAGE 2-A



PAGE 3-A



CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

REFERENCE COUNT: 52 THERE ARE 52 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L28 ANSWER 10 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2007:778901 HCAPLUS Full-text
DOCUMENT NUMBER: 149:556748
TITLE: Tagging (arene)ruthenium(II) anticancer complexes with fluorescent labels

AUTHOR(S): Zobi, Fabio; Mood, Beeta Balali; Wood, Peter A.; Fabbiani, Francesca P. A.; Parsons, Simon; Sadler, Peter J.
CORPORATE SOURCE: School of Chemistry, University of Edinburgh, Edinburgh, EH9 3JJ, UK
SOURCE: European Journal of Inorganic Chemistry (2007), (18), 2783-2796
CODEN: EJICFO; ISSN: 1434-1948
PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Fluorescent (arene)ruthenium(II) complexes were prepared by tagging a small fluorogenic reporter onto the chelating ligand of [(η6-arene)RuCl(Z)]+ (Z = chelating ligand). [(η6-P-cym)RuCl(NNO)](Cl) (2), [(η6-p-cym)RuCl(L3)](Cl) (3) and [(η6-p-cym)RuCl(L4)](Cl) (4) {p-cym = p-cymene, NNO = 2-[(2-aminoethyl)amino]ethanol, L3 = 2-[(2-aminoethyl)amino]ethyl-2-(methylamino)benzoate and L4 = N-{2-[(2-aminoethyl)amino]ethyl}-2-(methylamino)benzamide} were obtained in good yield from the reaction of the Ru dimer [(η6-p-cym)RuCl2]2 (1) and the corresponding ligand. The compds. were fully characterized and their x-ray crystal structures are reported. Compds. 3 and 4 show a photoluminescence response centered at 435 nm with partial fluorescence quenching of the fluorogenic reporters L3 and L4 upon coordination to the metal center. Species 2-4 show good solubility both in H2O and organic solvents. In H2O, 2-4 readily hydrolyze to form the aqua complexes. These are stable at acidic pH forming 10-15% of the corresponding hydroxido complexes in buffered solution (25 mM HEPES) as the pH is raised to a physiol. value (pH = 7.44). Under these conditions, 4 (but not 2 or 3) undergoes a fast pH-dependent reversible intramol. rearrangement. Exptl. data and semiempirical calcns. indicate that the major species arising from this transformation is a complex with a tridentate chelating ligand following deprotonation at the N atom of the amide group. Esterase-catalyzed hydrolysis of 3 liberates isatoic acid (MIAH) and generates 2 indicating that the complex is a substrate for the enzyme. Complexes similar to 3 may have potential for esterase-activated Ru-based prodrug delivery systems.

CC 29-13 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 22, 63, 73, 75

IT 1079093-67-6P
RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
(crystal structure, fluorescence spectra, hydrolysis; tagging (arene)ruthenium(II) potentially-anticancer complexes with fluorescent labels)

IT 1079093-64-3P
RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
(crystal structure, fluorescence, esterase-catalyzed hydrolysis; tagging (arene)ruthenium(II) potentially-anticancer complexes with fluorescent labels)

IT 1079093-61-0P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(crystal structure; tagging (arene)ruthenium(II) potentially-anticancer complexes with fluorescent labels)

IT 1079093-78-9P 1079093-80-3P
RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(tagging (arene)ruthenium(II) potentially-anticancer complexes with fluorescent labels)

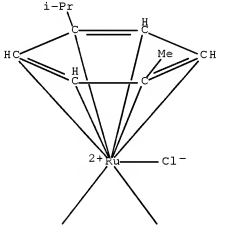
IT 1079093-73-4P 1079093-76-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(tagging (arene)ruthenium(II) potentially-anticancer complexes with fluorescent labels)

IT 1079093-67-6P
RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
(crystal structure, fluorescence spectra, hydrolysis; tagging (arene)ruthenium(II) potentially-anticancer complexes with fluorescent labels)

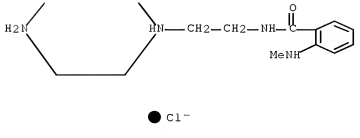
RN 1079093-67-6 HCAPLUS

CN Ruthenium(1+), [N-[2-[[2-(amino-κN)ethyl]amino-κN]ethyl]-2-(methylamino)benzamide]chloro[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]-, chloride (1:1) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



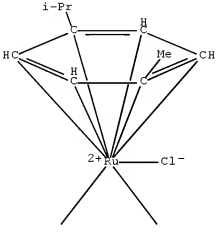
IT 1079093-64-3P
RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)

(crystal structure, fluorescence, esterase-catalyzed hydrolysis; tagging (arene)ruthenium(II) potentially-anticancer complexes with fluorescent labels)

RN 1079093-64-3 HCAPLUS

CN Ruthenium(1+), [2-[[2-(amino-κN)ethyl]amino-κN]ethyl 2-(methylamino)benzoate]chloro[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]-, chloride (1:1) (CA INDEX NAME)

PAGE 1-A



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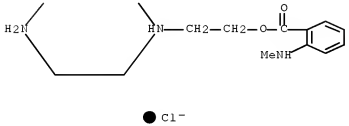

IT 1079093-61-0P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (crystal structure; tagging (arene)ruthenium(II) potentially-anticancer complexes with fluorescent labels)

RN 1079093-61-0 HCAPLUS

CN Ruthenium(1+), [2-[[2-(amino-κN)ethyl]amino-κN]ethanol]chloro[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]-, chloride (1:1) (CA INDEX NAME)

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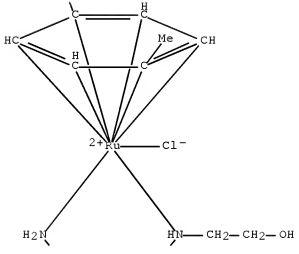
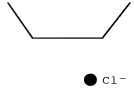


PAGE 3-A

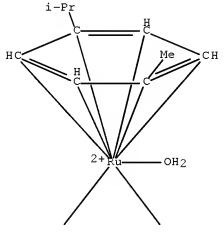


IT 1079093-78-9P 1079093-80-3P
RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(tagging (arene)ruthenium(II) potentially-anticancer complexes with fluorescent labels)

RN 1079093-78-9 HCAPLUS

CN Ruthenium(2+), [2-[[2-(amino-κN)ethyl]amino-κN]ethyl 2-(methylamino)benzoate]aqua[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]- (CA INDEX NAME)

PAGE 1-A



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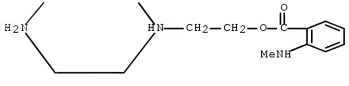
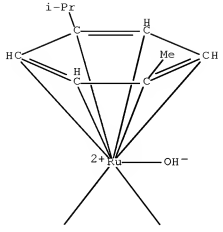


RN 1079093-80-3 HCAPLUS

CN Ruthenium(1+), [2-[[2-(amino-κN)ethyl]amino-κN]ethyl 2-(methylamino)benzoate]hydroxy[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]- (CA INDEX NAME)

PAGE 1-A



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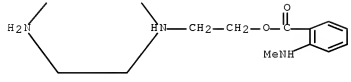
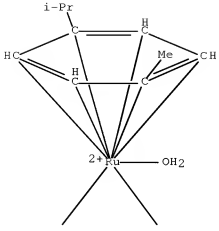


IT 1079093-73-4P 1079093-76-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(tagging (arene)ruthenium(II) potentially-anticancer complexes with fluorescent labels)

RN 1079093-73-4 HCAPLUS

CN Ruthenium(2+), [N-[2-[[2-(amino-κN)ethyl]amino-κN]ethyl]-2-(methylamino)benzamide]aqua[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]- (CA INDEX NAME)

PAGE 1-A



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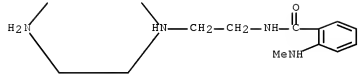
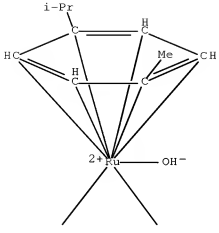


RN 1079093-76-7 HCAPLUS

CN Ruthenium(1+), [N-[2-[[2-(amino-κN)ethyl]amino-κN]ethyl]-2-(methylamino)benzamide]hydroxy[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]- (CA INDEX NAME)

PAGE 1-A



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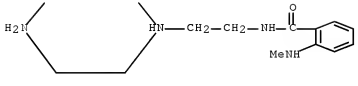


REFERENCE COUNT: 67 THERE ARE 67 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L28 ANSWER 11 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2007:349580 HCAPLUS Full-text
DOCUMENT NUMBER: 147:1084
TITLE: Structural and Energetic Properties of Organometallic Ruthenium(II) Diamine Anticancer Compounds and Their Interaction with Nucleobases
AUTHOR(S): Gossens, Christian; Tavernelli, Ivano; Rothlisberger, Ursula
CORPORATE SOURCE: Institut des Sciences et Ingenierie Chimiques, Ecole Polytechnique Federale de Lausanne (EPFL), Lausanne, CH-1015, Switz.
SOURCE: Journal of Chemical Theory and Computation (2007), 3(3), 1212-1222
CODEN: JCTCCE; ISSN: 1549-9618
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The authors rationalize the chemoselectivity of the monofunctional ruthenium anticancer compound [(η6-arene)Ru(II)(en)(OH2)]2+ (en=ethylenediamine; arene=benzene 1, p-cymene 2) toward guanine, using static DFT (BP86) and MP2 calcns. together with Car-Parrinello mol. dynamics. The calculated binding

energies for the three investigated nucleobases (G, A, C) decreases in the order G(N7) » C(O2) .apprx. C(N3) > A(N7) > G(O6) > OH2. The G(N7) complex is the most stable product due to a hydrogen bond of its O6 with one of the H2N-amine groups of en, while the corresponding NH2-H2N(en) interaction in the adenine complex is repulsive. A very low rotational barrier of 0.17 kcal/mol (BP86) and 0.64 kcal/mol (MP2) was calculated for the arene rotation in [(η6-C6H6)Ru(en)(Cl)]+ (3) allowing complexes containing arenes with bulky side chains like p-cymene to minimize steric interactions with, e.g., DNA by simple arene rotation. All [(η6-arene)Ru(en)(L)]2+ compds. exist in two stable conformers obtained for different diamine dihedral angle (NCCN) orientation, which, in the case of asym. ligands L, differ by up to .apprx.2.8 kcal/mol. Car-Parrinello dynamics reveal a chelating transition state for the interconversion between N7 and O6 binding of guanine to [(η6-arene)Ru(en)]2+.

CC 1-6 (Pharmacology)

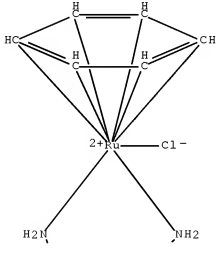
IT 65684-75-5 75701-08-5 488127-65-7
903595-24-4
RL: PAC (Pharmacological activity); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(structural and energetic properties of organometallic ruthenium(II) diamine anticancer compds. and their interaction with nucleobases)

IT 65684-75-5 75701-08-5 488127-65-7
RL: PAC (Pharmacological activity); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(structural and energetic properties of organometallic ruthenium(II) diamine anticancer compds. and their interaction with nucleobases)

RN 65684-75-5 HCAPLUS

CN Ruthenium(1+), (η6-benzene)chloro(1,2-ethanediamine-κN1,κN2)- (CA INDEX NAME)

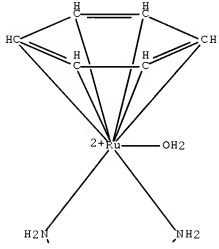
PAGE 1-A



PAGE 2-A

RN 75701-08-5 HCAPLUS
CN Ruthenium(2+), aqua(η6-benzene)(1,2-ethanediamine-κN1,κN2)-
(CA INDEX NAME)

PAGE 1-A



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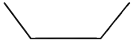

RN 488127-65-7 HCAPLUS
CN Ruthenium(2+), aqua(1,2-ethanediamine-κN1,κN2)[(1,2,3,4,5,6-
η)-1-methyl-4-(1-methylethyl)benzene]- (CA INDEX NAME)

PAGE 1-A

i-Pr

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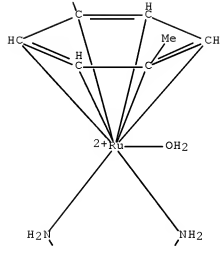


PAGE 3-A

REFERENCE COUNT: 42 THERE ARE 42 CITED REFERENCES AVAILABLE FOR THIS

L28 ANSWER 12 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2006:1079231 HCAPLUS Full-text
DOCUMENT NUMBER: 146:27919
TITLE: Structure-Activity Relationships for Cytotoxic Ruthenium(II) Arene Complexes Containing N,N-, N,O-, and O,O-Chelating Ligands
AUTHOR(S): Habtemariam, Abraha; Melchart, Michael; Fernandez, Rafael; Parsons, Simon; Oswald, Iain D. H.; Parkin, Andrew; Fabbiani, Francesca P. A.; Davidson, James E.; Dawson, Alice; Aird, Rhona E.; Jodrell, Duncan I.; Sadler, Peter J.
CORPORATE SOURCE: School of Chemistry, University of Edinburgh, Edinburgh, EH9 3JJ, UK
SOURCE: Journal of Medicinal Chemistry (2006), 49(23), 6858-6868
CODEN: JMCMAR; ISSN: 0022-2623
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 146:27919

AB Ruthenium arene complexes containing bidentate diamine, amino acid and diketonate chelate ligands were prepared by a variety of appropriate procedures and examined for cytostatic activity against human cancer cells. Organometallic Ru(II) complexes [(η6-arene)Ru(XY)Cl]Z, where XY is an N,N- (diamine), N,O- (e.g., amino acidate), or O,O- (e.g., β-diketonate) chelating ligand, the arene ranges from benzene derivs. to fused polycyclic hydrocarbons, and Z is usually PF6, were prepared by direct or reduction-assisted complexation of arenes, substitution of cycloalkadiene or arene ligands with subsequent complexation of bidentate XY-ligands. The x-ray structures of 13 complexes are reported. All have the characteristic "piano-stool" geometry. The structure-activity relationships was evaluated for cytotoxicity of the prepared complexes against human cancer cells. The complexes most active toward A2780 human ovarian cancer cells contained XY = ethylenediamine (en) and extended polycyclic arenes. Complexes with polar substituents on the arene or XY = bipyridyl derivs. exhibited reduced activity. The activity of the O,O-chelated complexes depended strongly on the substituents and on the arene. For arene = p-cymene, XY = amino acidate complexes were inactive. Complexes were not cross-resistant with cisplatin, and cross-resistance to Adriamycin was circumvented by replacing XY = en with 1,2-phenylenediamine. Some complexes were also active against colon, pancreatic, and lung cancer cells.

CC 29-13 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 1, 63, 75

IT Antitumor agents
Aryl groups
Birch reduction
Cyclotrimerization
Human
Lung, neoplasm
Pancreas, neoplasm
Substitution reaction, coordinative
(preparation and cytotoxicity against human cancer cells of half-sandwich arene ruthenium diamine, amino acid and diketonate complexes)

IT 642488-40-2P 915952-57-7P 915952-63-5P
915952-73-7P 915952-93-1P 915953-00-3P
RL: PAC (Pharmacological activity); PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(crystal structure; preparation, cytotoxicity and nucleobase binding of half-sandwich arene ruthenium diamine, amino acid and diketonate complexes)

IT 915952-81-7P
RL: PAC (Pharmacological activity); PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(mol. structure; preparation, cytotoxicity and nucleobase binding of half-sandwich arene ruthenium diamine, amino acid and diketonate complexes)

IT 88659-10-3P 128642-48-8P 154975-96-9P
642488-37-7P 642488-41-3P 790299-58-0P
790299-62-6P 790299-66-0P 876622-25-2P
915952-28-2P 915952-30-6P 915952-32-8P
915952-36-2P 915952-49-7P 915952-53-3P
915952-55-5P 915952-59-9P 915952-61-3P
915952-67-9P 915952-69-1P 915952-75-9P
915952-77-1P 915952-79-3P 915952-83-9P
915952-96-4P 915952-97-5P 915952-99-7P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation, cytotoxicity and nucleobase binding of half-sandwich arene ruthenium diamine, amino acid and diketonate complexes)

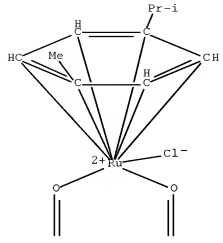
IT 75701-00-7 336876-05-2 336876-16-5
377759-82-5 386722-46-9 386722-50-5
493037-44-8 876622-23-0
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(preparation, cytotoxicity and nucleobase binding of half-sandwich arene ruthenium diamine, amino acid and diketonate complexes)

IT 642488-40-2P 915952-57-7P 915952-63-5P
915952-73-7P 915953-00-3P
RL: PAC (Pharmacological activity); PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(crystal structure; preparation, cytotoxicity and nucleobase binding of half-sandwich arene ruthenium diamine, amino acid and diketonate complexes)

RN 642488-40-2 HCAPLUS

CN Ruthenium, chloro[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene](2,2,6,6-tetramethyl-3,5-heptanedionato-κO3,κO5)- (CA INDEX NAME)

PAGE 1-A



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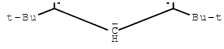
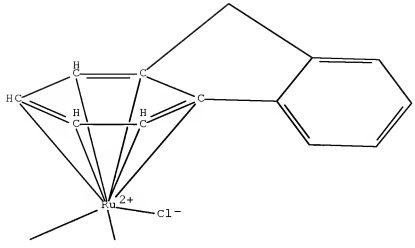


RN 915952-57-7 HCAPLUS
CN Ruthenium(1+), chloro(1,2-ethanediamine-κN1,κN2)[(1,2,3,4,4a,9a-η)-9H-fluorene]-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 915952-56-6
CMF C15 H18 Cl N2 Ru
CCI CCS

PAGE 1-A



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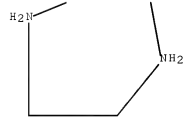


CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

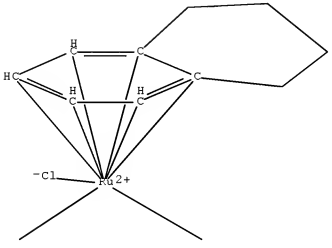
RN 915952-63-5 HCAPLUS
CN Ruthenium(1+), chloro(1,2-ethanediamine-
κN1,κN2)[(4a,5,6,7,8,8a-η)-1,2,3,4-tetrahydronaphthalene]-

, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 915952-62-4
CMF C12 H20 Cl N2 Ru
CCI CCS

PAGE 1-A



PAGE 2-A

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 915952-73-7 HCAPLUS
CN Ruthenium(1+), chloro[(3a,4,5,6,7,7a-η)-2,3-dihydro-1H-indene](hexahydro-1H-1,4-diazepine-κN1,κN4)-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

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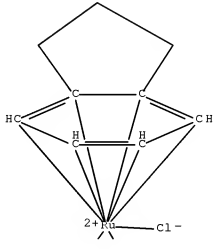
CRN 915952-72-6
CMF C14 H22 Cl N2 Ru
CCI CCS

PAGE 1-A



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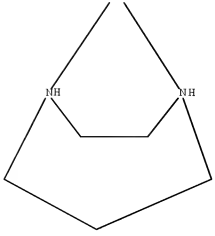
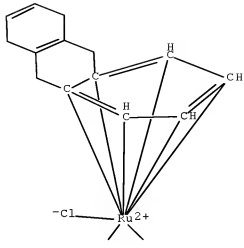


CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 915953-00-3 HCAPLUS
CN Ruthenium(1+), (1,2-benzenediamine-κN1,κN2)chloro[(5,6,7,8,8a,10a-η)-1,4,9,10-tetrahydroanthracene]-, chloride (1:1) (CA INDEX NAME)

PAGE 1-A



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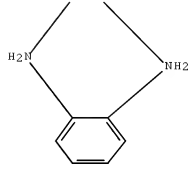


IT 915952-81-7P
RL: PAC (Pharmacological activity); PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(mol. structure; preparation, cytotoxicity and nucleobase binding of half-sandwich arene ruthenium diamine, amino acid and diketonate complexes)

RN 915952-81-7 HCAPLUS

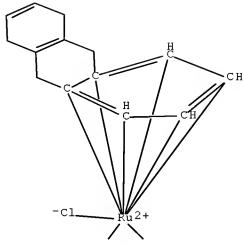
CN Ruthenium(1+), (1,2-benzenediamine-κN1,κN2)chloro[(5,6,7,8,8a,10a-η)-1,4,9,10-tetrahydroanthracene]-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 915952-80-6

CMF C20 H22 Cl N2 Ru
CCI CCS

PAGE 1-A



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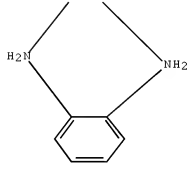

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

IT 88659-10-3P 128642-48-9P 154975-96-9P
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790299-62-6P 790299-66-0P 876622-25-2P
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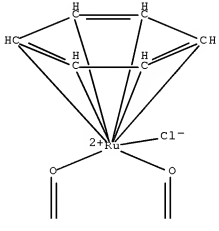
915952-77-1P 915952-79-3P 915952-83-9P
915952-96-4P 915952-97-5P 915952-99-7P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation, cytotoxicity and nucleobase binding of half-sandwich arene ruthenium diamine, amino acid and diketonate complexes)

RN 88659-10-3 HCAPLUS

CN Ruthenium, (η6-benzene)chloro(2,4-pentanedionato-κO2,κO4)-
(CA INDEX NAME)

PAGE 1-A



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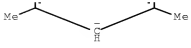
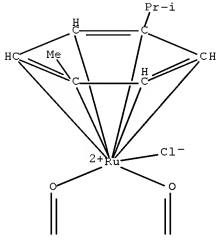


RN 128642-48-8 HCAPLUS
CN Ruthenium, chloro[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene](2,4-pentanedionato-κO1,κO4)- (CA INDEX NAME)

PAGE 1-A



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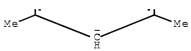

RN 154975-96-9 HCAPLUS
CN Ruthenium(1+), (1,2-benzenediamine-κN,κN')chloro[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

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CRN 154975-95-8
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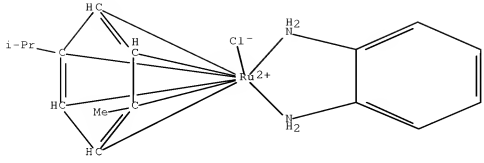
CCI CCS

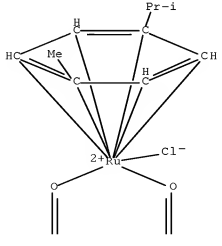


CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 642488-37-7 HCAPLUS
CN Ruthenium, chloro(1,3-diphenyl-1,3-propanedionato-κO1,κO3)[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]- (CA INDEX NAME)

PAGE 1-A



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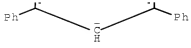
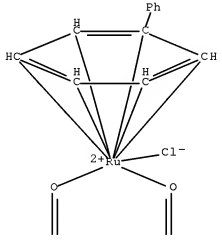


RN 642488-41-3 HCAPLUS
CN Ruthenium, [(1,2,3,4,5,6-η)-1,1'-biphenyl]chloro(2,4-pentanedionato-κO2,κO4)- (CA INDEX NAME)

PAGE 1-A



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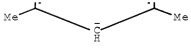
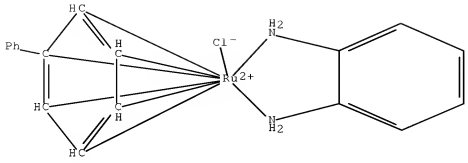


RN 790299-58-0 HCAPLUS
CN Ruthenium(1+), (1,2-benzenediamine-κN1,κN2)[(1,2,3,4,5,6-η)-1,1'-biphenyl]chloro-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 790299-57-9
CMF C18 H18 Cl N2 Ru

CCI CCS



CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 790299-62-6 HCAPLUS
CN Ruthenium(1+), (1,2-benzenediamine-κN1,κN2)chloro[(1,2,3,4,4a,9a-η)-9,10-dihydroanthracene]-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 790299-61-5
CMF C20 H20 Cl N2 Ru
CCI CCS

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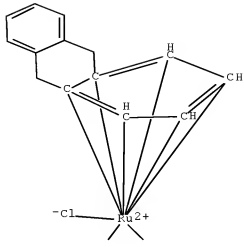

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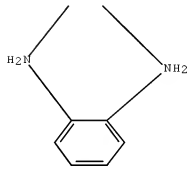

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 790299-66-0 HCAPLUS

CN Ruthenium(1+), chloro[(3a,4,5,6,7,7a-η)-2,3-dihydro-1H-indene](4-methyl-1,2-benzenediamine-κN1,κN2)-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 790299-65-9
CMF C16 H20 Cl N2 Ru
CCI CCS

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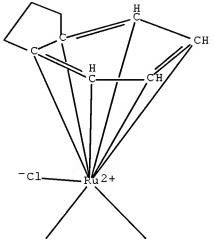

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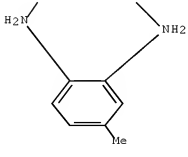

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 876622-25-2 HCAPLUS
CN Ruthenium(1+), chloro[(3a,4,5,6,7,7a-η)-2,3-dihydro-1H-indene](1,2-ethanediamine-κN1,κN2)-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 876622-24-1
CMF C11 H18 Cl N2 Ru
CCI CCS

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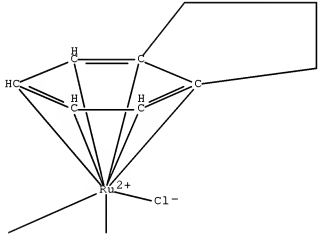
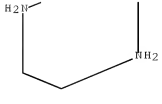


PAGE 2-A



CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 915952-28-2 HCAPLUS
CN Ruthenium(1+), chloro(1,2-ethanediamine-κN1,κN2)[(1,2,3,4,5,6-η)-phenoxybenzene]-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 915952-27-1
CMF C14 H18 Cl N2 O Ru
CCI CCS

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PhO

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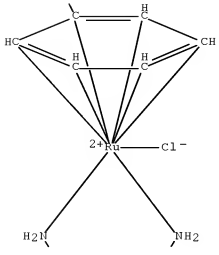

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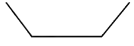

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 915952-30-6 HCAPLUS
CN Ruthenium(1+), chloro(1,2-ethanediamine-κN1,κN2)[(η6-phenyl)phenylmethanone]-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 915952-29-3
CMF C15 H18 Cl N2 O Ru

CCI CCS

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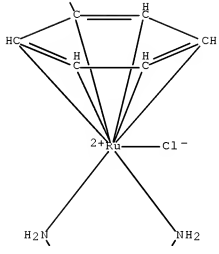

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CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 915952-32-8 HCAPLUS
CN Ruthenium(1+), [(1,2,3,4,5,6-η)-benzamide]chloro(1,2-ethanediamine-κN1,κN2)-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 915952-31-7
CMF C9 H15 Cl N3 O Ru
CCI CCS

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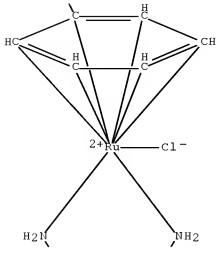

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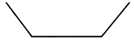
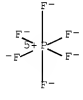


CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS



RN 915952-36-2 HCAPLUS
CN Ruthenium(1+), [(1,2,3,4,5,6-η)-bromobenzene]chloro(1,2-ethanediamine-κN1,κN2)-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 915952-35-1
CMF C8 H13 Br Cl N2 Ru

CCI CCS

PAGE 1-A

Br

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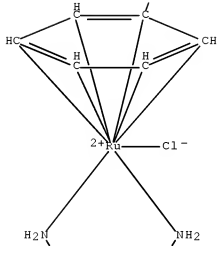

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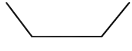

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 915952-49-7 HCAPLUS
CN Ruthenium(1+), chloro(1,2-ethanediamine-κN1,κN2)[(1,2,3,4,5,6-η)-(1-methyl-1-phenylethyl)benzene]-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 915952-48-6
CMF C17 H24 Cl N2 Ru
CCI CCS

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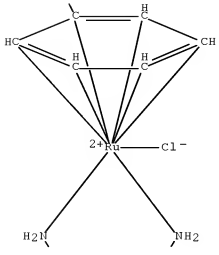

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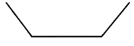
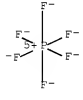


CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS



RN 915952-53-3 HCAPLUS
CN Ruthenium(1+), chloro(1,2-ethanediamine-
κN1,κN2)[(1',2',3',4',5',6'-η)-5'-phenyl-1,1':3',1''-
terphenyl]-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 915952-52-2

CMF C26 H26 Cl N2 Ru
CCI CCS

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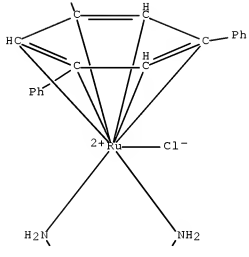

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CM 2

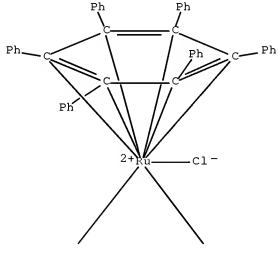
CRN 16919-18-9
CMF F6 P
CCI CCS

RN 915952-55-5 HCAPLUS
CN Ruthenium(1+), chloro(1,2-ethanediamine-
κN1,κN2)[(1',2',3',4',5',6'-η)-3',4',5',6'-tetraphenyl-
1,1':2',1''-terphenyl]-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 915952-54-4
CMF C44 H38 Cl N2 Ru
CCI CCS

PAGE 1-A



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CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 915952-59-9 HCAPLUS
CN Ruthenium(1+), chloro[(1,2,3,4,4a,10a-η)-9,10-dihydrophenanthrene](1,2-ethanediamine-κN1,κN2)-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 915952-58-8
CMF C16 H20 Cl N2 Ru
CCI CCS

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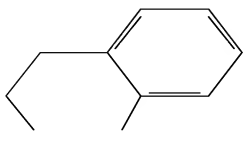

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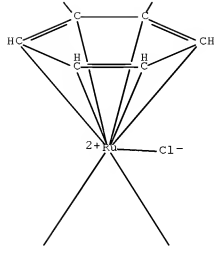

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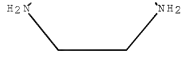

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 915952-61-3 HCAPLUS
CN Ruthenium(1+), chloro[(1,2,3,4,4a,11a-η)-10,11-dihydro-5H-dibenzo[a,d]cycloheptene](1,2-ethanediamine-κN1,κN2)-,

hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 915952-60-2
CMF C17 H22 Cl N2 Ru
CCI CCS

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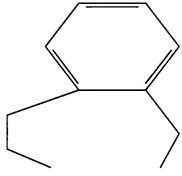
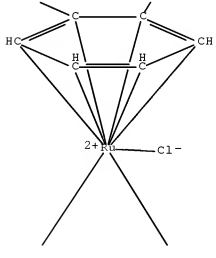


PAGE 2-A



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CM 2

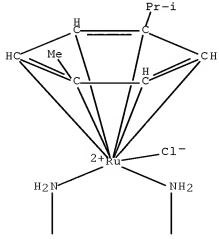
CRN 16919-18-9
CMF F6 P
CCI CCS

RN 915952-67-9 HCAPLUS
CN Ruthenium(1+), chloro[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene](1,3-propanediamine-κN1,κN3)-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 915952-66-8
CMF C13 H24 Cl N2 Ru
CCI CCS

PAGE 1-A



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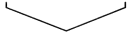


CM 2

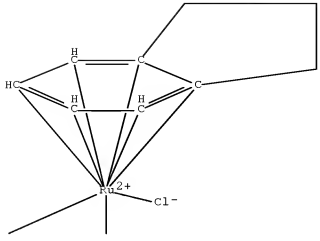
CRN 16919-18-9
CMF F6 P
CCI CCS

RN 915952-69-1 HCAPLUS
CN Ruthenium(1+), chloro[(3a,4,5,6,7,7a-η)-2,3-dihydro-1H-indene](1,2-propanediamine-κN1,κN2)-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 915952-68-0
CMF C12 H20 Cl N2 Ru
CCI CCS

PAGE 1-A



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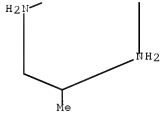
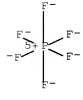


CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

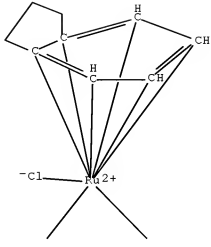


RN 915952-75-9 HCAPLUS
CN Ruthenium(1+), chloro[rel-(1R,2R)-1,2-cyclohexanediamine-κN1,κN2][(3a,4,5,6,7,7a-η)-2,3-dihydro-1H-indene]-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 915952-74-8
CMF C15 H24 Cl N2 Ru
CCI CCS

PAGE 1-A



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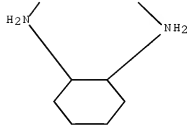


CM 2

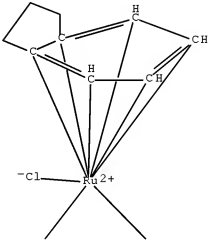
CRN 16919-18-9
CMF F6 P
CCI CCS

RN 915952-77-1 HCAPLUS
CN Ruthenium(1+), chloro[(3a,4,5,6,7,7a-η)-2,3-dihydro-1H-indene](4,5-dimethyl-1,2-benzenediamine-κN1,κN2)-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 915952-76-0
CMF C17 H22 Cl N2 Ru
CCI CCS

PAGE 1-A



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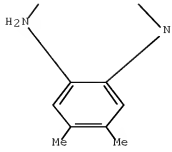

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 915952-79-3 HCAPLUS
CN Ruthenium(1+), (1,2-benzenediamine-κN1,κN2)chloro[(4a,5,6,7,8,8a-η)-1,2,3,4-tetrahydronaphthalene]-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 915952-78-2
CMF C16 H20 Cl N2 Ru
CCI CCS

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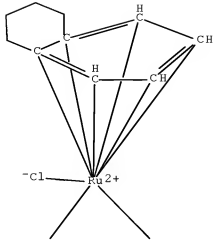

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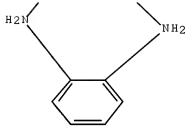


CM 2

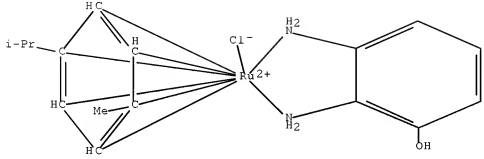
CRN 16919-18-9
CMF F6 P
CCI CCS

RN 915952-83-9 HCAPLUS
CN Ruthenium(1+), chloro[2,3-di(amino-κN)phenol][(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]-, hexafluorophosphate(1-) (1:1) (CA

INDEX NAME)

CM 1

CRN 915952-82-8
CMF C16 H22 Cl N2 O Ru
CCI CCS

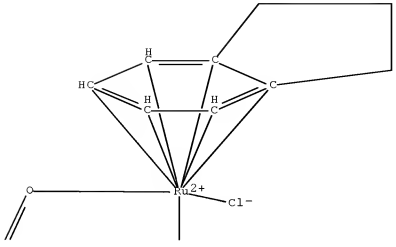


CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 915952-96-4 HCAPLUS
CN Ruthenium, chloro[(3a,4,5,6,7,7a-η)-2,3-dihydro-1H-indene](2,4-pentanedionato-κO2,κO4)- (CA INDEX NAME)

PAGE 1-A



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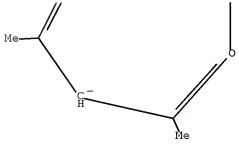
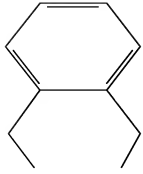


RN 915952-97-5 HCAPLUS
CN Ruthenium, chloro[(1,2,3,4,4a,9a-η)-9,10-dihydroanthracene](2,4-pentanedionato-κO2,κO4)- (CA INDEX NAME)

PAGE 1-A



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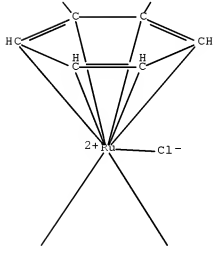

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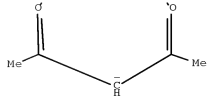
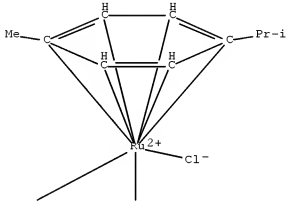


RN 915952-99-7 HCAPLUS
CN Ruthenium, chloro[1-[1-(hydroxy-κO)-2-naphthalenyl]ethanonato-κO][(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]- (CA INDEX NAME)

PAGE 1-A



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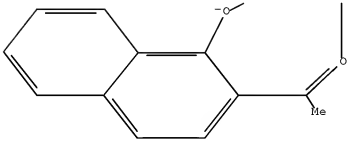
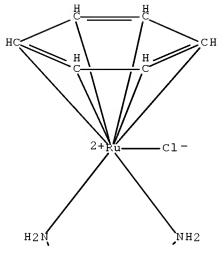


IT 75701-00-7 336876-05-2 336876-16-5
377759-82-5 386722-46-9 386722-50-5
493037-44-8 876622-23-0
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(preparation, cytotoxicity and nucleobase binding of half-sandwich arene ruthenium diamine, amino acid and diketonate complexes)
RN 75701-00-7 HCAPLUS
CN Ruthenium(1+), (η6-benzene)chloro(1,2-ethanediamine-κN1,κN2)-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 65684-75-5
CMF C8 H14 Cl N2 Ru
CCI CCS

PAGE 1-A



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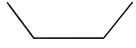

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 336876-05-2 HCAPLUS

CN Ruthenium(1+), chloro(1,2-ethanediamine-κN1,κN2)[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 65684-77-7
CMF C12 H22 Cl N2 Ru
CCI CCS

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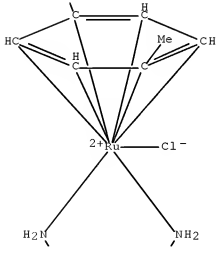
i-Pr

PAGE 2-A



PAGE 3-A

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

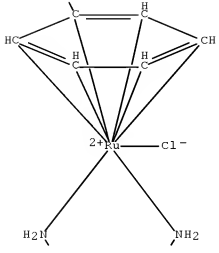
RN 336876-16-5 HCAPLUS
CN Ruthenium(1+), [(1,2,3,4,5,6-η)-1,1'-biphenyl]chloro(1,2-ethanediamine-κN1,κN2)-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 336876-15-4
CMF C14 H18 Cl N2 Ru
CCI CCS

PAGE 1-A

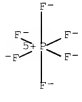
PAGE 2-A



PAGE 3-A

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS



RN 377759-82-5 HCAPLUS
CN Ruthenium(1+), chloro(1,2-ethanediamine-κN,κN')[methyl (1,2,3,4,5,6-η)-benzoate]-, hexafluorophosphate(1-) (1:1) (CA INDEX

NAME)

CM 1

CRN 377759-81-4
CMF C10 H16 Cl N2 O2 Ru
CCI CCS

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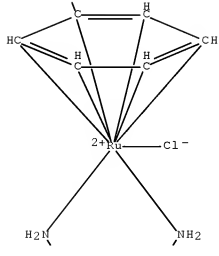
PAGE 2-A



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CM 2

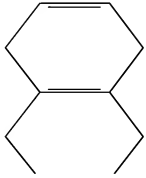
CRN 16919-18-9
CMF F6 P
CCI CCS

RN 386722-46-9 HCAPLUS
CN Ruthenium(1+), chloro(1,2-ethanediamine-
κN1,κN2)[(5,6,7,8,8a,10a-η)-1,4,9,10-tetrahydroanthracene]-
, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 386722-45-8
CMF C16 H22 Cl N2 Ru
CCI CCS

PAGE 1-A



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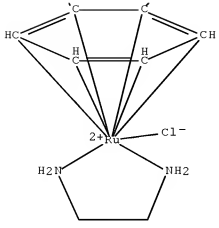


CM 2

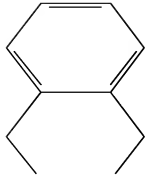
CRN 16919-18-9
CMF F6 P
CCI CCS

RN 386722-50-5 HCAPLUS
CN Ruthenium(1+), chloro[(1,2,3,4,4a,9a-η)-9,10-dihydroanthracene](1,2-ethanediamine-κN1,κN2)-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 386722-49-2
CMF C16 H20 Cl N2 Ru
CCI CCS

PAGE 1-A



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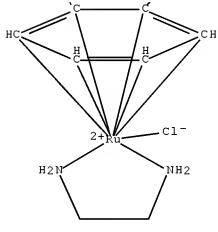

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 493037-44-8 HCAPLUS
CN Ruthenium(1+), chloro(1,2-ethanediamine-κN1,κN2)[ethyl (1,2,3,4,5,6-η)-benzoate]-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 493037-43-7
CMF C11 H18 Cl N2 O2 Ru
CCI CCS

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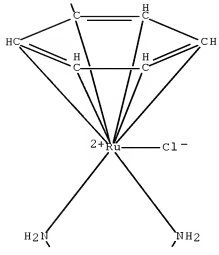

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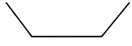


CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

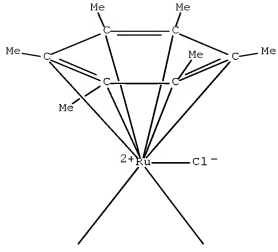
RN 876622-23-0 HCAPLUS
CN Ruthenium(1+), chloro(1,2-ethanediamine-κN1,κN2)[(1,2,3,4,5,6-η)-1,2,3,4,5,6-hexamethylbenzene]-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 876622-22-9

CMF C14 H26 Cl N2 Ru
CCI CCS

PAGE 1-A



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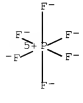
CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS



REFERENCE COUNT: 88 THERE ARE 88 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L28 ANSWER 13 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2006:829509 HCAPLUS Full-text
DOCUMENT NUMBER: 145:433516
TITLE: Ruthenation of duplex and single-stranded d(CGGCCG) by organometallic anticancer complexes
AUTHOR(S): Liu, L, Hong-Ke; Wang, Fuyi; Parkinson, John A.; Bella, Juraj; Sadler, Peter J.
CORPORATE SOURCE: School of Chemistry, University of Edinburgh, Edinburgh, EH9 3JJ, UK
SOURCE: Chemistry--A European Journal (2006), 12(23), 6151-6165
CODEN: CEUJED; ISSN: 0947-6539
PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
DOCUMENT TYPE: Journal
LANGUAGE: English

AB We have studied the interaction of the organometallic anticancer ruthenium(II) complexes [(η6-p-cymene)Ru(en)Cl][PF6] (1) and [(η6-biphenyl)Ru(en)Cl][PF6] (2) (en=ethylenediamine) with the single-stranded (ss) DNA hexamer d(CGGCCG) (I) and the duplex d(CGGCCG)2 (II) by HPLC, ESI-MS, and one- and two-dimensional 1H and 15N NMR spectroscopy. For ss-DNA, all three G's are readily ruthenated with [(η6-arene)-Ru(en)]2+, but for duplex DNA there is preferential ruthenation of G3 and G6, and no binding to G2 was detected. For monoruthenated duplexes, N7 ruthenation of G is accompanied by strong hydrogen bonding between G-O6 and en-NH for the p-cymene adducts. Intercalation of the non-coordinated Ph ring between G3 and C4 or G6 and C5 was detected in the biphenyl adducts of mono- and diruthenated duplexes, together with weakening of the G-O6···NH-en hydrogen bonding. The arene ligand plays a major role in distorting the duplex either through steric interactions (p-cymene) or through intercalation (biphenyl).

CC 6-2 (General Biochemistry)
Section cross-reference(s): 29, 78

IT 73-40-5, Guanine 94854-96-3 94854-96-3D, duplex 336876-05-2 336876-16-5
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(ruthenation of duplex and single-stranded d(CGGCCG) by organometallic anticancer complexes through intercalation and hydrogen bonding)

IT 336876-05-2 336876-16-5
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(ruthenation of duplex and single-stranded d(CGGCCG) by organometallic anticancer complexes through intercalation and hydrogen bonding)

RN 336876-05-2 HCAPLUS

CN Ruthenium(1+), chloro(1,2-ethanediamine-κN1,κN2)[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 65684-77-7
CMF C12 H22 Cl N2 Ru
CCI CCS

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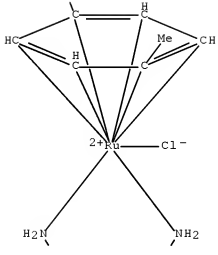

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CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 336876-16-5 HCAPLUS
CN Ruthenium(1+), [(1,2,3,4,5,6-η)-1,1'-biphenyl]chloro(1,2-ethanediamine-κN1,κN2)-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 336876-15-4
CMF C14 H18 Cl N2 Ru
CCI CCS

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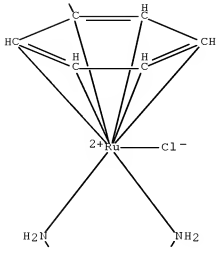
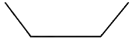


PAGE 3-A



CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L28 ANSWER 14 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2006:536882 HCAPLUS Full-text
DOCUMENT NUMBER: 145:211147
TITLE: In silico evolution of substrate selectivity: Comparison of organometallic ruthenium complexes with

the anticancer drug cisplatin
AUTHOR(S): Deubel, Dirk V.; Lau, Justin Kai-Chi
CORPORATE SOURCE: USI Campus, Computational Science, ETH Zurich, Lugano, CH-6900, Switz.
SOURCE: Chemical Communications (Cambridge, United Kingdom) (2006), (23), 2451-2453
CODEN: CHCOFS; ISSN: 1359-7345
PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A comparative quantum chemical approach helps to clarify how the selectivity of anticancer metallopharmaceuticals towards potential biol. targets can be controlled by metal and ligands.

CC 29-13 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 6, 65

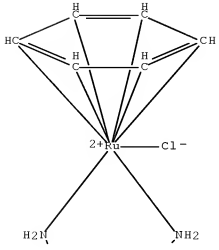
IT 15663-27-1 15691-31-3 15691-33-5 17524-19-5 21393-88-4
23678-44-6 29933-34-4 39003-94-6 52483-42-8 53861-42-0
56082-85-0 58619-10-6 65684-75-5 66219-74-7
75701-08-5 99924-20-6 99924-32-0 129106-69-0 130665-82-6
439217-66-0 439217-68-2 718596-47-5 874461-59-3 903594-95-6
903594-96-7 903594-97-8 903594-98-9 903595-01-7 903595-02-8
903595-03-9 903595-04-0 903595-05-1 903595-06-2 903595-07-3
903595-08-4 903595-09-5 903595-10-8 903595-11-9 903595-12-0
903595-13-1 903595-14-2 903595-15-3 903595-16-4 903595-17-5
903595-18-6 903595-19-7 903595-20-0
903595-21-1 903595-22-2 903595-23-3 903595-24-4
903595-25-5 903907-63-1
RL: PRP (Properties)
(B3LYP DFT and continuum dielec. model study of comparison of organometallic ruthenium complexes with the anticancer drug cisplatin)

IT 65684-75-5 75701-08-5 903595-19-7
903595-20-0 903595-21-1 903595-22-2
RL: PRP (Properties)
(B3LYP DFT and continuum dielec. model study of comparison of organometallic ruthenium complexes with the anticancer drug cisplatin)

RN 65684-75-5 HCAPLUS

CN Ruthenium(1+), (η6-benzene)chloro(1,2-ethanediamine-κN1,κN2)- (CA INDEX NAME)

PAGE 1-A



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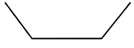
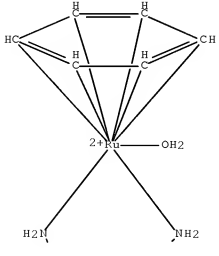


RN 75701-08-5 HCAPLUS
CN Ruthenium(2+), aqua(η6-benzene)(1,2-ethanediamine-κN1,κN2)-
(CA INDEX NAME)

PAGE 1-A



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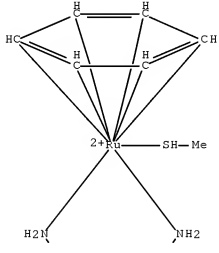
RN 903595-19-7 HCAPLUS
CN Ruthenium(2+), (η6-benzene)(1,2-ethanediamine-κN,κN')(methanethiol)- (9CI) (CA INDEX NAME)

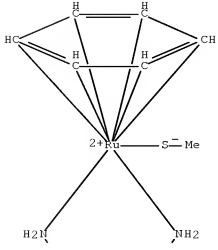
PAGE 1-A



PAGE 2-A

RN 903595-20-0 HCAPLUS
CN Ruthenium(1+), (η6-benzene)(1,2-ethanediamine-κN,κN')(methanethiolato)- (9CI) (CA INDEX NAME)

PAGE 1-A



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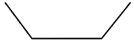
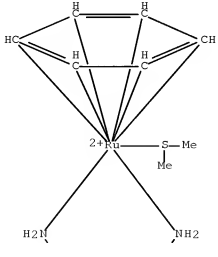


RN 903595-21-1 HCAPLUS
CN Ruthenium(2+), (η6-benzene)(1,2-ethanediamine-κN,κN')[thiobis[methane]]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A

RN 903595-22-2 HCAPLUS
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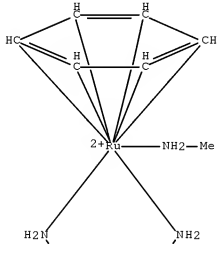
PAGE 1-A



PAGE 2-A

REFERENCE COUNT: 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L28 ANSWER 15 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2006:484913 HCAPLUS Full-text
DOCUMENT NUMBER: 145:167392
TITLE: Ruthenium(II) arene complexes containing four- and five-membered monoanionic O,O-chelate rings
AUTHOR(S): Melchart, Michael; Habtemariam, Abraha; Parsons,

Simon; Moggach, Stephen A.; Sadler, Peter J.
CORPORATE SOURCE: School of Chemistry, University of Edinburgh, Edinburgh, EH9 3JJ, UK
SOURCE: Inorganica Chimica Acta (2006), 359(9), 3020-3028 CODEN: ICHAA3; ISSN: 0020-1693
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 145:167392

AB Optimization of the design of half-sandwich organometallic RuII arene complexes as anticancer agents depends on control of ligand exchange reactions. The aqueous chemical of complexes containing O,O-chelate rings are studied. The presence of the four-membered O,O-chelate ring from acetate (AcO) in [(η6-p-cymene)Ru(AcO)Cl] was confirmed by x-ray crystallog., but in solution the acetate ligand was labile and the hydroxo-bridged dimer [((η6-p-cymene)Ru)2(μ-OH)3]+ readily formed. The dimer was relatively unreactive towards 9-Et guanine. The tropolonato (trop) complex [(η6-p-cymene)Ru(trop)Cl] was stable in aqueous media and the x-ray crystal structure of the aqua adduct [(η6-p-cymene)Ru(trop)(H2O)]CF3SO3, containing a five-membered O,O-chelate ring from trop, was determined [(η6-p-cymene)Ru(trop)Cl] reacted with guanosine to form N7 adducts and with adenosine to form both N7 and N1 adducts. Competitive reactions with guanosine and adenosine gave rise to guanosine:adenosine adducts in a ca. 1.3:1 mol ratio.

CC 29-13 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 6, 75

IT 900493-37-0P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(crystal structure; preparation and optimization design as anticancer agent of ruthenium arene complexes containing four- and five-membered monoanionic oxygen chelate rings)

IT 900493-31-4P 900493-33-6P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and optimization design as anticancer agent of ruthenium arene complexes containing four- and five-membered monoanionic oxygen chelate rings)

IT 900493-37-0P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(crystal structure; preparation and optimization design as anticancer agent of ruthenium arene complexes containing four- and five-membered monoanionic oxygen chelate rings)

RN 900493-37-0 HCAPLUS

CN Ruthenium(1+), aqua[2-(hydroxy-κO)-2,4,6-cycloheptatrien-1-onato-κO][(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

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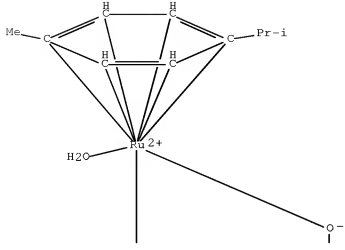
CRN 900493-32-5
CMF C17 H21 O3 Ru
CCI CCS

PAGE 1-A



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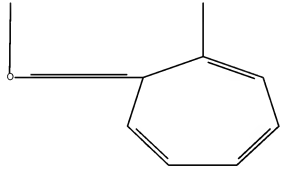


CM 2

CRN 37181-39-8
CMF C F3 O3 S

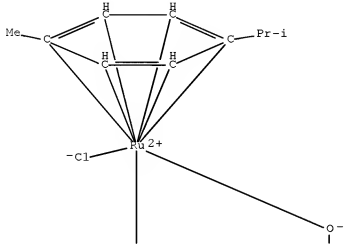
IT 900493-31-4P 900493-33-6P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and optimization design as anticancer agent of ruthenium arene complexes containing four- and five-membered monoanionic oxygen chelate rings)

RN 900493-31-4 HCAPLUS

CN Ruthenium, chloro[2-(hydroxy-κO)-2,4,6-cycloheptatrien-1-onato-κO][(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]- (CA INDEX NAME)

PAGE 1-A



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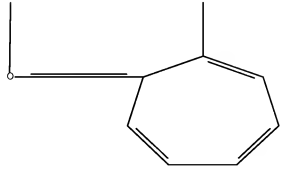


RN 900493-33-6 HCAPLUS

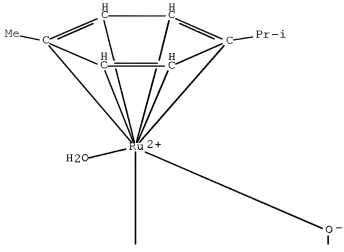
CN Ruthenium(1+), aqua[2-(hydroxy-κO)-2,4,6-cycloheptatrien-1-onato-κO][(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]-, nitrate (9CI) (CA INDEX NAME)

CM 1

CRN 900493-32-5

CMF C17 H21 O3 Ru
CCI CCS

PAGE 1-A



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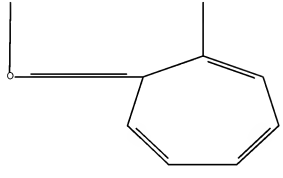

CM 2

CRN 14797-55-8
CMF N O3

REFERENCE COUNT: 42 THERE ARE 42 CITED REFERENCES AVAILABLE FOR THIS

L28 ANSWER 16 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2006:164382 HCAPLUS Full-text
DOCUMENT NUMBER: 144:233199
TITLE: Arene ruthenium(II) compounds and their use in cancer therapy
INVENTOR(S): Habtemariam, Abraha; Sadler, Peter John
PATENT ASSIGNEE(S): The University Court of the University of Edinburgh, UK
SOURCE: PCT Int. Appl., 45 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006018649	A1	20060223	WO 2005-GB3242	20050819
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
AU 2005273726	A1	20060223	AU 2005-273726	20050819
CA 2578280	A1	20060223	CA 2005-2578280	20050819
EP 1786412	A1	20070523	EP 2005-771813	20050819
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR				
CN 101043885	A	20070926	CN 2005-80035541	20050819
JP 2008510693	T	20080410	JP 2007-526570	20050819
BR 2005014430	A	20080506	BR 2005-14430	20050819
MX 200702099	A	20070424	MX 2007-2099	20070220
US 20080096846	A1	20080424	US 2007-660627	20070220
IN 2007DN01459	A	20070803	IN 2007-DN1459	20070222
NO 2007001481	A	20070516	NO 2007-1481	20070320
KR 2007060091	A	20070612	KR 2007-706364	20070320
PRIORITY APPLN. INFO.:			GB 2004-18643 A	20040820
			WO 2005-GB3242 W	20050819

OTHER SOURCE(S): CASREACT 144:233199; MARPAT 144:233199
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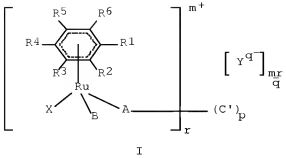


I

AB Preparation of title compds. I or a solvate or prodrug thereof, wherein: R1, R2, R3, R4, R5, R6 = are independently selected from H, C1-7 alkyl, C5-20 aryl, C3-20 heterocyclyl, halo, ester, amido, acyl, sulfo, sulfonamido, ether, thioether, azo, amino, or R1R2 together with the ring to which they are attached form a saturated or unsatd. carbocyclic or heterocyclic group containing up to three 3- to 8- membered carbocyclic or heterocyclic rings, wherein each carbocyclic or heterocyclic ring may be fused to one or more other carbocyclic or heterocyclic rings; X = neutral or neg. charged N- or S-donor ligand; Y = counterion; m = 0-1; q = 1-3; C' = C1-12 alkylene bound to two A groups; p = 0-1; and r = 1 when p = 0 and r = 2 when p is 1; and A and B are each independently O-donor, N-donor or S-donor ligands, and may be connected to one another, is described. Thus, reaction of [(η6-C6H5C6H5)Ru(en)Cl][PF6] (en = NH2CH2CH2NH2) with AgNO3 in MeOH/H2O followed by treatment with NaN3 and NH4PF6 gave 34% [(η6-C6H5C6H5)Ru(en)N3][PF6]. The compds. are used in cancer therapy.

CC 29-13 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 1, 75

IT Antitumor agents
(preparation of arene ruthenium diamine compds. and their use in cancer therapy)

IT 876622-51-4P 876656-55-2P
RL: PAC (Pharmacological activity); PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(crystal structure; preparation of arene ruthenium diamine compds. and their use in cancer therapy)

IT 876622-41-2P 876622-43-4P 876622-45-6P 876622-47-8P 876622-49-0P 876622-53-6P 876622-55-8P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of arene ruthenium diamine compds. and their use in cancer therapy)

IT 100-48-1, 4-Cyanopyridine 108-99-6, 3-Methylpyridine 333-20-0, Potassium thiocyanate 930-69-8, Sodium benzenethiolate 2457-47-8, 3,5-Dichloropyridine 71902-33-5, 3,5-Difluoropyridine 336876-16-5 876622-23-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of arene ruthenium diamine compds. and their use in cancer therapy)

IT 876656-55-2P
RL: PAC (Pharmacological activity); PRP (Properties); SPN

(Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(crystal structure; preparation of arene ruthenium diamine compds. and their use in cancer therapy)

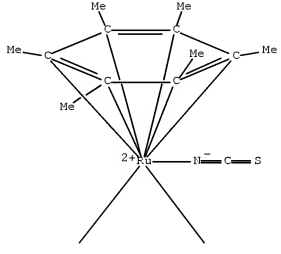
RN 876656-55-2 HCAPLUS

CN Ruthenium(1+), (1,2-ethanediamine-κN,κN')[(1,2,3,4,5,6-η)-hexamethylbenzene](thiocyanato-κN)-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 876656-54-1
CMF C15 H26 N3 Ru S
CCI CCS

PAGE 1-A



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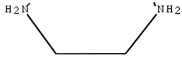

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

IT 876622-41-2P 876622-43-4P 876622-55-8P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of arene ruthenium diamine compds. and their use in cancer therapy)

RN 876622-41-2 HCAPLUS

CN Ruthenium(1+), azido(1,2-ethanediamine-κN,κN')[(1,2,3,4,5,6-η)-hexamethylbenzene]-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

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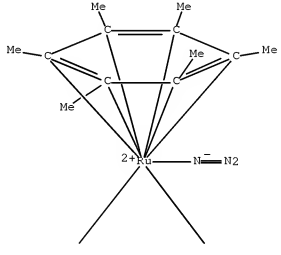
CRN 876622-40-1
CMF C14 H26 N5 Ru
CCI CCS

PAGE 1-A



PAGE 2-A

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 876622-43-4 HCAPLUS
CN Ruthenium(1+), azido[(1,2,3,4,5,6-η)-1,1'-biphenyl](1,2-ethanediamine-κN,κN')-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

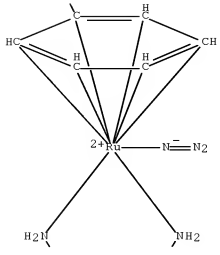
CM 1

CRN 876622-42-3
CMF C14 H18 N5 Ru
CCI CCS

PAGE 1-A

Ph

PAGE 2-A



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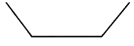


CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

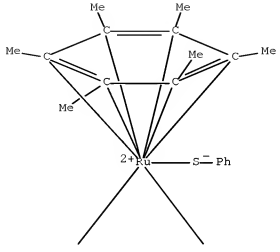
RN 876622-55-8 HCAPLUS
CN Ruthenium(1+), (benzenethiolato)(1,2-ethanediamine-κN,κN')[(1,2,3,4,5,6-η)-hexamethylbenzene]-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 876622-54-7

CMF C20 H31 N2 Ru S
CCI CCS

PAGE 1-A



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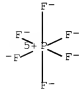
CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS



IT 336876-16-5 876622-23-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of arene ruthenium diamine compds. and their use in

cancer therapy)

RN 336876-16-5 HCAPLUS

CN Ruthenium(1+), [(1,2,3,4,5,6-η)-1,1'-biphenyl]chloro(1,2-ethanediamine-κN1,κN2)-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 336876-15-4
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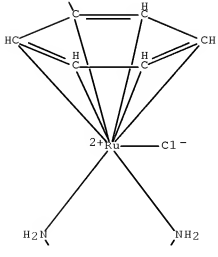
CCI CCS

PAGE 1-A

Ph

PAGE 2-A



PAGE 3-A

CM 2

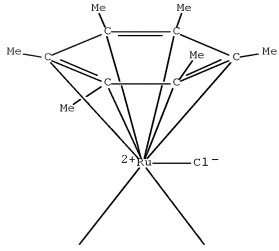
CRN 16919-18-9
CMF F6 P
CCI CCS

RN 876622-23-0 HCAPLUS
CN Ruthenium(1+), chloro(1,2-ethanediamine-κN1,κN2)[(1,2,3,4,5,6-η)-1,2,3,4,5,6-hexamethylbenzene]-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 876622-22-9
CMF C14 H26 Cl N2 Ru
CCI CCS

PAGE 1-A



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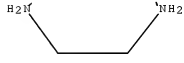

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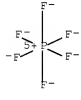
CRN 16919-18-9
CMF F6 P
CCI CCS



REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L28 ANSWER 17 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2006:44133 HCAPLUS Full-text
DOCUMENT NUMBER: 144:246729
TITLE: Anti-tumour activity in non-small cell lung cancer

models and toxicity profiles for novel ruthenium(II) based organo-metallic compounds

AUTHOR(S): Guichard, S. M.; Else, R.; Reid, E.; Zeitlin, B.; Aird, R.; Muir, M.; Dodds, M.; Fiebig, H.; Sadler, P. J.; Jodrell, D. I.

CORPORATE SOURCE: Pharmacology and Drug Development Group, Cancer Research UK Centre, University of Edinburgh, Western General Hospital, Edinburgh, EH4 2XR, UK

SOURCE: Biochemical Pharmacology (2006), 71(4), 408-415
CODEN: BCPCA6; ISSN: 0006-2952

PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Novel ruthenium(II) organo-metallic compds. are active in ovarian cancer models [(η6-C6H5C6H5)Ru(en)Cl]+ (as a PF6 salt, where en = ethylenediamine (RM175)) has been evaluated in a 13-cell line panel. Particular sensitivity (.apprx.10-fold lower than mean IC50) was noted in breast cancer and non-small cell lung cancer cell lines. In addition, IC50 in the A549 was 2 μM and RM175 (25 mg-kg-1, days 1 and 5, i.p.) caused a significant (p = 0.004) growth delay in a xenograft model. HC11 [(η6-tetrahydroanthracene)Ru(en)Cl]PF6 was more potent in the A549 cell line (IC50 0.5 μM). HC11 (25 mg kg-1, days 1, 8 and 15, i.p.) was also active in vivo. Following RM175 25 mg kg-1, days 1 and 5, and 15 mg-kg-1, days 1-5, HC11 25 and 40 mg-kg-1, day 1, elevated alanine transaminase levels were detected, suggesting hepatotoxicity. No changes were observed in kidney or hematol. parameters. In liver sections, multi-focal hepatic necrosis was seen, becoming confluent at high doses of HC11. In vitro studies confirmed that HC11 was more toxic than RM175 to fresh human hepatocytes and equitoxic to mithramycin. Liver toxicity may be related to the arene ligand and modification may reduce the potential for hepatic toxicity, while maintaining the anti-tumor activity seen.

CC 1-6 (Pharmacology)
Section cross-reference(s): 4

IT Antitumor agents
Hepatotoxicity
Human
(anti-tumor activity in non-small cell lung cancer models and toxicity profiles for novel ruthenium(II) based organo-metallic compds.)

IT 336876-16-5P, RM 175
RL: ADV (Adverse effect, including toxicity); PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(RM 175; anti-tumor activity in non-small cell lung cancer models and toxicity profiles for novel ruthenium(II) based organo-metallic compds.)

IT 386722-46-9P, HC 11
RL: ADV (Adverse effect, including toxicity); PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(anti-tumor activity in non-small cell lung cancer models and toxicity profiles for novel ruthenium(II) based organo-metallic compds.)

IT 336876-16-5P, RM 175
RL: ADV (Adverse effect, including toxicity); PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(RM 175; anti-tumor activity in non-small cell lung cancer models and toxicity profiles for novel ruthenium(II) based organo-metallic compds.)

RN 336876-16-5 HCAPLUS

CN Ruthenium(1+), [(1,2,3,4,5,6-η)-1,1'-biphenyl]chloro(1,2-ethanediamine-κN1,κN2)-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

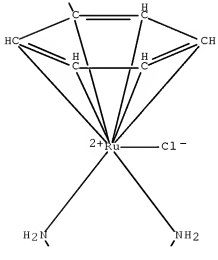
CM 1

CRN 336876-15-4
CMF C14 H18 Cl N2 Ru
CCI CCS

PAGE 1-A

Ph

PAGE 2-A



CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

IT 386722-46-9P, HC 11
RL: ADV (Adverse effect, including toxicity); PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use) ; BIOL (Biological study); PREP (Preparation); USES (Uses)
(anti-tumor activity in non-small cell lung cancer models and toxicity profiles for novel ruthenium(II) based organo-metallic compds.)
RN 386722-46-9 HCAPLUS
CN Ruthenium(1+), chloro(1,2-ethanediamine-κN1,κN2)[(5,6,7,8,8a,10a-η)-1,4,9,10-tetrahydroanthracene]-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

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CRN 386722-45-8
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CCI CCS

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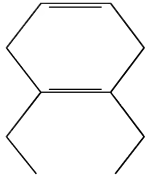

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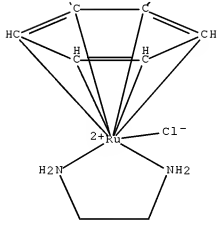

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CRN 16919-18-9
CMF F6 P
CCI CCS

REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L28 ANSWER 18 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2006:38977 HCAPLUS Full-text
DOCUMENT NUMBER: 144:285767
TITLE: Tuning the Reactivity of Osmium(II) and Ruthenium(II) Arene Complexes under Physiological Conditions
AUTHOR(S): Peacock, Anna F. A.; Habtemariam, Abraha; Fernandez, Rafael; Walland, Victoria; Fabbiani, Francesca P. A.; Parsons, Simon; Aird, Rhona E.; Jodrell, Duncan I.; Sadler, Peter J.
CORPORATE SOURCE: School of Chemistry, University of Edinburgh, Edinburgh, EH9 3JJ, UK
SOURCE: Journal of the American Chemical Society (2006), 128(5), 1739-1748
CODEN: JACSAT; ISSN: 0002-7863
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 144:285767

AB The OsII arene ethylenediamine (en) complexes [(η6-biphenyl)Os(en)Cl][Z], Z = BPh4 (4) and BF4 (5), are inactive toward A2780 ovarian cancer cells despite 4 being isostructural with an active RuII analog, 4R. Hydrolysis of 5 occurred 40 times more slowly than 4R. The aqua adduct 5A has a low pKa (6.3) compared to that of [(η6-biphenyl)Ru(en)(OH2)]2+ (7.7) and is therefore largely in the hydroxo form at physiol. pH. The rate and extent of reaction of 5 with 9-ethylguanine were also less than those of 4R. The authors replaced the neutral en ligand by anionic acetylacetonate (acac). The complexes [(η6-arene)Os(acac)Cl], arene = biphenyl (6), benzene (7), and p-cymene (8), adopt piano-stool structures similar to those of the RuII analogs and form weak dimers through intermol. (arene)C-H···O(acac) H-bonds. Remarkably, these OsII acac complexes undergo rapid hydrolysis to produce not only the aqua adduct, [(η6-arene)Os(acac)(OH2)]+, but also the hydroxo-bridged dimer, [(η6-arene)Os(μ2-OH)3Os(η6-arene)]+. The pKa values for the aqua adducts 6A, 7A, and 8A (7.1, 7.3, and 7.6, resp.) are lower than that for [(η6-p-cymene)Ru(acac)(OH2)]+ (9.4). Complex 8A rapidly forms adducts with 9-ethylguanine and adenosine, but not with cytidine or thymidine. Despite their reactivity toward nucleobases, complexes 6-8 were inactive toward A549 lung cancer cells. This is attributable to rapid hydrolysis and formation of unreactive hydroxo-bridged dimers which, surprisingly, were the only species present in aqueous solution at biol. relevant concns. Hence, the choice of chelating ligand in OsII (and RuII) arene complexes can have a dramatic effect on hydrolysis behavior and nucleobase binding and provides a means of tuning the reactivity and the potential for discovery of anticancer complexes.

CC 1-6 (Pharmacology)
Section cross-reference(s): 63, 67, 75, 78
IT 879132-69-1P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(tuning the reactivity of osmium(II) and ruthenium(II) arene complexes
under physiol. conditions in relation to hydrolysis and reaction with
nucleobases and anticancer activity)

IT 879132-69-1P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(tuning the reactivity of osmium(II) and ruthenium(II) arene complexes
under physiol. conditions in relation to hydrolysis and reaction with
nucleobases and anticancer activity)

RN 879132-69-1 HCAPLUS

CN Ruthenium(1+), [(1,2,3,4,5,6-η)-1,1'-biphenyl]chloro(1,2-ethanediamine-
κN,κN')-, tetraphenylborate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 336876-15-4
CMF C14 H18 Cl N2 Ru
CCI CCS

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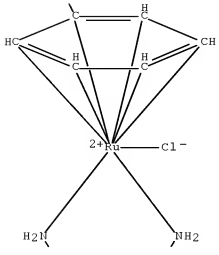
PAGE 2-A



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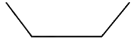

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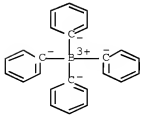
CCI CCS



REFERENCE COUNT: 62 THERE ARE 62 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L28 ANSWER 19 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2006:9229 HCAPLUS Full-text
DOCUMENT NUMBER: 144:233191

TITLE: Controlling ligand substitution reactions of organometallic complexes: Tuning cancer cell cytotoxicity

AUTHOR(S): Wang, Fuyi; Habtemariam, Abraha; van der Geer, Erwin P. L.; Fernandez, Rafael; Melchart, Michael; Deeth, Robert J.; Aird, Rhona; Guichard, Sylvie; Fabbiani, Francesca P. A.; Lozano-Casal, Patricia; Oswald, Iain D. H.; Jodrell, Duncan I.; Parsons, Simon; Sadler, Peter J.

CORPORATE SOURCE: School of Chemistry, University of Edinburgh, Edinburgh, EH9 3JJ, UK

SOURCE: Proceedings of the National Academy of Sciences of the United States of America (2005), 102(51), 18269-18274
CODEN: PNASA6; ISSN: 0027-8424

PUBLISHER: National Academy of Sciences

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 144:233191

AB Organometallic compds. offer broad scope for the design of therapeutic agents, but this avenue has yet to be widely explored. A key concept in the design of anticancer complexes is optimization of chemical reactivity to allow facile attack on the target site (e.g., DNA) yet avoid attack on other sites associated with unwanted side effects. How this result can be achieved for monofunctional "piano-stool" ruthenium(II) arene complexes of the type [(η6-arene)Ru(ethylenediamine)(X)]n+ was discussed. A potentially important activation mechanism for reactions with biomols. is hydrolysis. D. functional calcns. suggested that aquation (substitution of X by H2O) occurs by a concerted ligand interchange mechanism. The kinetics and equilibrium for hydrolysis of 21 complexes, containing, as X, halides and pseudohalides, pyridine derivs., and a thiolate, together with benzene (bz) or a substituted bz as arene, using UV-visible spectroscopy, HPLC, and electrospray MS was studied. The x-ray structures of six complexes are reported. In general, complexes that hydrolyze either rapidly {e.g., X = halide [arene = hexamethylbenzene (hmb)]} or moderately slowly [e.g., X = azide, dichloropyridine (arene = hmb)] are active toward A2780 human ovarian cancer cells, whereas complexes that do not aquate (e.g., X = py) are inactive. An intriguing exception is the X = thiophenolate complex, which undergoes little hydrolysis and appears to be activated by a different mechanism. The ability to tune the chemical reactivity of this class of organometallic ruthenium arene compds. should be useful in optimizing their design as anticancer agents.

CC 29-13 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 1, 6, 22, 75

IT Activation energy
Antitumor agents
Cytotoxic agents
Density functional theory
Equilibrium
Human
Hydrolysis kinetics
Reaction mechanism
Structure-activity relationship
Substitution reaction, coordinative
(controlling ligand substitution reactions of organometallic arene ruthenium diamine piano stool complexes and tuning cancer cell cytotoxicity)

IT 75701-00-7P 336876-02-9P 336876-08-5P 336876-16-3P 386722-46-9P 386722-50-5P 876622-29-6P 876622-31-0P 876622-33-2P 876622-37-6P 876622-41-2P 876622-43-4P

876622-45-6P 876622-47-8P 876622-49-0P 876622-53-6P
876622-55-8P
RL: PAC (Pharmacological activity); RCT (Reactant); SPN
(Synthetic preparation); BIOL (Biological study); PREP (Preparation); RACT
(Reactant or reagent)
(controlling ligand substitution reactions of organometallic arene
ruthenium diamine piano stool complexes and tuning cancer
cell cytotoxicity)

IT 876622-23-0P 876622-25-2P 876622-27-4P
876622-35-4P 876622-39-8P 876622-51-4P
RL: PAC (Pharmacological activity); PRP (Properties); RCT
(Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP
(Preparation); RACT (Reactant or reagent)
(crystal structure; controlling ligand substitution reactions of
organometallic arene ruthenium diamine piano stool complexes and tuning
cancer cell cytotoxicity)

IT 75701-00-7P 336876-02-9P 336876-08-5P
336876-16-3P 386722-46-9P 386722-50-5P
876622-29-6P 876622-31-0P 876622-33-2P
876622-37-6P 876622-41-2P 876622-43-4P
876622-55-8P
RL: PAC (Pharmacological activity); RCT (Reactant); SPN
(Synthetic preparation); BIOL (Biological study); PREP (Preparation); RACT
(Reactant or reagent)
(controlling ligand substitution reactions of organometallic arene
ruthenium diamine piano stool complexes and tuning cancer
cell cytotoxicity)

RN 75701-00-7 HCAPLUS

CN Ruthenium(1+), (η6-benzene)chloro(1,2-ethanediamine-
κN1,κN2)-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

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CRN 65684-75-5
CMF C8 H14 Cl N2 Ru
CCI CCS

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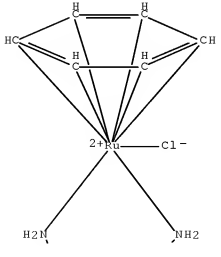


PAGE 2-A

CM 2

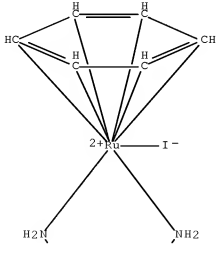
CRN 16919-18-9
CMF F6 P
CCI CCS

RN 336876-02-9 HCAPLUS
CN Ruthenium(1+), (η6-benzene)(1,2-ethanediamine-κN,κN')iodo-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 336876-01-8
CMF C8 H14 I N2 Ru
CCI CCS

PAGE 1-A



PAGE 2-A

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 336876-08-5 HCAPLUS
CN Ruthenium(1+), (1,2-ethanediamine-κN,κN')iodo[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 336876-07-4
CMF C12 H22 I N2 Ru
CCI CCS

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i-Pr

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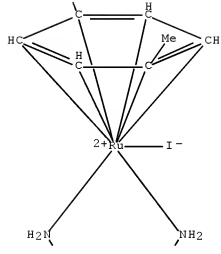

PAGE 3-A

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 336876-16-5 HCAPLUS
CN Ruthenium(1+), [(1,2,3,4,5,6-η)-1,1'-biphenyl]chloro(1,2-ethanediamine-κN1,κN2)-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

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CRN 336876-15-4
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CCI CCS

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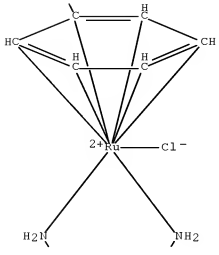
PAGE 2-A



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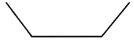

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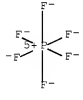

RN 386722-46-9 HCAPLUS
CN Ruthenium(1+), chloro(1,2-ethanediamine-
κN1,κN2)[(5,6,7,8,8a,10a-η)-1,4,9,10-tetrahydroanthracene]-
, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

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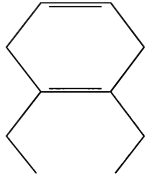
CCI CCS

PAGE 1-A



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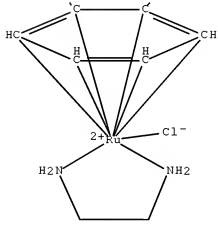

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CMF F6 P
CCI CCS

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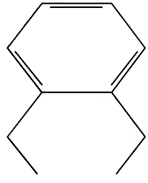
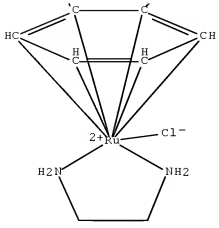
CCI CCS

PAGE 1-A





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CRN 16919-18-9
CMF F6 P
CCI CCS

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CCI CCS

PAGE 1-A

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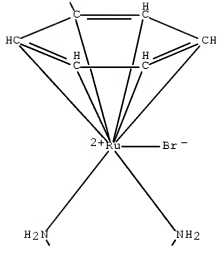

PAGE 3-A

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 876622-31-0 HCAPLUS
CN Ruthenium(1+), bromo[(3a,4,5,6,7,7a-η)-2,3-dihydro-1H-indene](1,2-ethanediamine-κN,κN')-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

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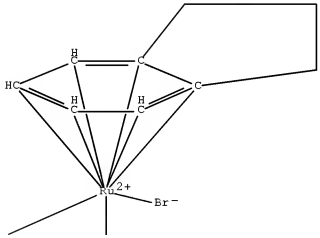
CRN 876622-30-9
CMF C11 H18 Br N2 Ru
CCI CCS

PAGE 1-A



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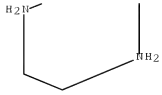

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CRN 16919-18-9
CMF F6 P
CCI CCS

RN 876622-33-2 HCAPLUS
CN Ruthenium(1+), (η6-benzene)bromo(1,2-ethanediamine-κN,κN')-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

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CRN 876622-32-1
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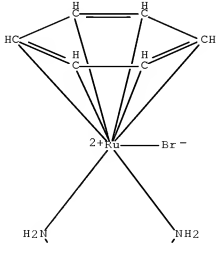
CCI CCS

PAGE 1-A



PAGE 2-A

CM 2

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CMF F6 P
CCI CCS

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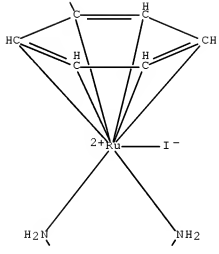
CCI CCS

PAGE 1-A

PAGE 2-A



PAGE 3-A

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 876622-41-2 HCAPLUS
CN Ruthenium(1+), azido(1,2-ethanediamine-κN,κN')[(1,2,3,4,5,6-η)-hexamethylbenzene]-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

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CCI CCS

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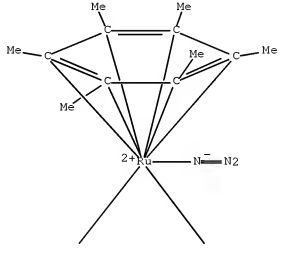

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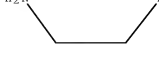

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CRN 16919-18-9
CMF F6 P
CCI CCS

RN 876622-43-4 HCAPLUS
CN Ruthenium(1+), azido[(1,2,3,4,5,6-η)-1,1'-biphenyl](1,2-ethanediamine-κN,κN')-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

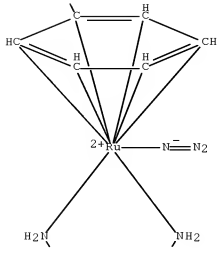
CM 1

CRN 876622-42-3
CMF C14 H18 N5 Ru
CCI CCS

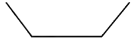
PAGE 1-A

Ph

PAGE 2-A



PAGE 3-A



CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

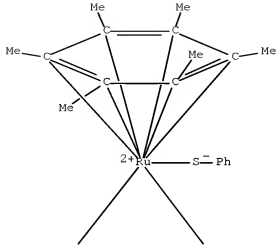
RN 876622-55-8 HCAPLUS
CN Ruthenium(1+), (benzenethiolato)(1,2-ethanediamine-κN,κN')[(1,2,3,4,5,6-η)-hexamethylbenzene]-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 876622-54-7

CMF C20 H31 N2 Ru S
CCI CCS

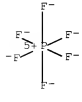
PAGE 1-A



PAGE 2-A

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS



IT 876622-23-0P 876622-25-2P 876622-27-4P
876622-35-4P 876622-39-8P
RL: PAC (Pharmacological activity); PRP (Properties); RCT

(Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)
(crystal structure; controlling ligand substitution reactions of organometallic arene ruthenium diamine piano stool complexes and tuning cancer cell cytotoxicity)

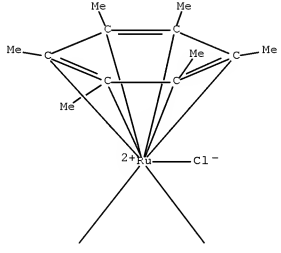
RN 876622-23-0 HCAPLUS

CN Ruthenium(1+), chloro(1,2-ethanediamine-κN1,κN2)[(1,2,3,4,5,6-η)-1,2,3,4,5,6-hexamethylbenzene]-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 876622-22-9
CMF C14 H26 Cl N2 Ru
CCI CCS

PAGE 1-A



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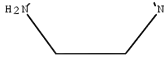


CM 2

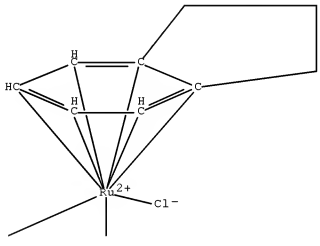
CRN 16919-18-9
CMF F6 P
CCI CCS

RN 876622-25-2 HCAPLUS
CN Ruthenium(1+), chloro[(3a,4,5,6,7,7a-η)-2,3-dihydro-1H-indene](1,2-ethanediamine-κN1,κN2)-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 876622-24-1
CMF C11 H18 Cl N2 Ru
CCI CCS

PAGE 1-A



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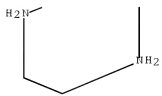


CM 2

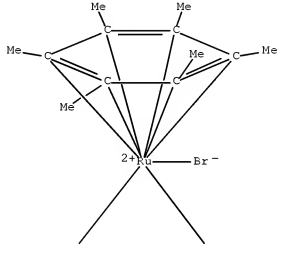
CRN 16919-18-9
CMF F6 P
CCI CCS

RN 876622-27-4 HCAPLUS
CN Ruthenium(1+), bromo(1,2-ethanediamine-κN,κN')[(1,2,3,4,5,6-η)-hexamethylbenzene]-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 876622-26-3
CMF C14 H26 Br N2 Ru
CCI CCS

PAGE 1-A



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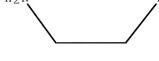


CM 2

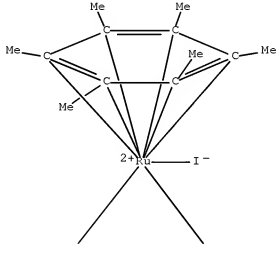
CRN 16919-18-9
CMF F6 P
CCI CCS

RN 876622-35-4 HCAPLUS
CN Ruthenium(1+), (1,2-ethanediamine-κN,κN')[(1,2,3,4,5,6-η)-hexamethylbenzene]iodo-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 876622-34-3
CMF C14 H26 I N2 Ru
CCI CCS

PAGE 1-A



PAGE 2-A

CM 2

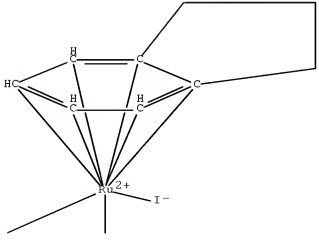
CRN 16919-18-9
CMF F6 P
CCI CCS

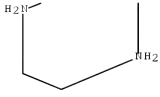
RN 876622-39-8 HCAPLUS
CN Ruthenium(1+), [(3a,4,5,6,7,7a-η)-2,3-dihydro-1H-indene](1,2-ethanediamine-κN,κN')iodo-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 876622-38-7
CMF C11 H18 I N2 Ru
CCI CCS

PAGE 1-A





CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

REFERENCE COUNT: 45 THERE ARE 45 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L28 ANSWER 20 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2005:1250577 HCAPLUS Full-text
DOCUMENT NUMBER: 144:150464
TITLE: Competition between Glutathione and Guanine for a Ruthenium(II) Arene Anticancer Complex: Detection of a Sulfenato Intermediate
AUTHOR(S): Wang, Fuyi; Xu, Jingjing; Habtemariam, Abraha; Bella, Juraj; Sadler, Peter J.
CORPORATE SOURCE: School of Chemistry, University of Edinburgh, Edinburgh, EH9 3JJ, UK
SOURCE: Journal of the American Chemical Society (2005), 127(50), 17734-17743
CODEN: JACSAT; ISSN: 0002-7863
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 144:150464

AB The organometallic anticancer complex [(η6-bip)Ru(en)Cl]+ (1; bip = biphenyl, en = ethylenediamine) selectively binds to guanine (N7) bases of DNA (Novakova, O.; Chen, H.; Vrana, O.; Rodger, A.; Sadler, P. J.; Brabec, V.; Biochem. 2003, 42, 11544-11554). In this work, competition between the tripeptide glutathione (γ-L-Glu-L-Cys-Gly; GSH) and guanine (as guanosine

3',5'-cyclic monophosphate, cGMP) for complex 1 was investigated using HPLC, LC-MS and 1H,15N NMR spectroscopy. In unbuffered solution (pH ca. 3), the reaction of 1 with GSH gave three intermediates: an S-bound thiolato adduct [(η6-bip)Ru(en)(GS-S)] (4) and two carboxylate-bound glutathione products [(η6-bip)Ru(en)(GSH-O)]+ (5, 6) during the early stages (<6 h), followed by en displacement and formation of a tri-GS-bridged dinuclear RuII complex [((η6-bip)Ru)2(GS-μ-S)3]2- (7). Under physiol. relevant conditions (micromolar Ru concns., pH 7, 22 mM NaCl, 310 K), the thiolato complex 4 was unexpectedly readily oxidized by dioxygen to the sulfenato complex [(η6-bip)Ru(en)(GS(O)-S)] (8) instead of forming the dinuclear complex 7. Under these conditions, competitive reaction of complex 1 with GSH and cGMP gave the cGMP adduct [(η6-bip)Ru(en)(cGMP-N7)]+ (10) as the major product, accounting for ca. 62% of total Ru after 72 h, even in the presence of a 250-fold molar excess of GSH. The oxidation of coordinated glutathione in the thiolato complex 4 to the sulfenate in 8 appears to provide a facile route for displacement of S-bound glutathione by G N7. Redox reactions of cysteinyl adducts of these RuII arene anticancer complexes could therefore play a significant role in their biol. activity.

CC 29-13 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 6

IT 70-18-8, Glutathione, reactions 40732-48-7 336876-16-5 421546-04-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(detection of sulfenato intermediate in reaction of glutathione and guanine with biphenyl ruthenium ethylenediamine anticancer complex)

IT 461386-42-5P 461386-48-1P 873867-88-0P 873867-89-1P 873867-90-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(detection of sulfenato intermediate in reaction of glutathione and guanine with biphenyl ruthenium ethylenediamine anticancer complex)

IT 488127-68-0P 873867-91-5P 873867-92-6P 873867-93-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(detection of sulfenato intermediate in reaction of glutathione and guanine with biphenyl ruthenium ethylenediamine anticancer complex)

IT 336876-16-5 421546-04-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(detection of sulfenato intermediate in reaction of glutathione and guanine with biphenyl ruthenium ethylenediamine anticancer complex)

RN 336876-16-5 HCAPLUS

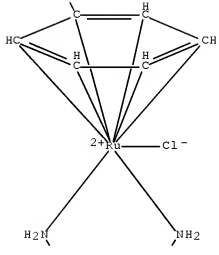
CN Ruthenium(1+), [(1,2,3,4,5,6-η)-1,1'-biphenyl]chloro(1,2-ethanediamine-κN1,κN2)-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 336876-15-4
CMF C14 H18 Cl N2 Ru
CCI CCS

PAGE 1-A

PAGE 2-A



PAGE 3-A

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 421546-04-5 HCAPLUS
CN Ruthenium(1+), [(1,2,3,4,5,6-η)-1,1'-biphenyl]chloro[1,2-ethanediamine-15N)-κN,κN']-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 421546-03-4
CMF C14 H18 Cl N2 Ru
CCI CCS

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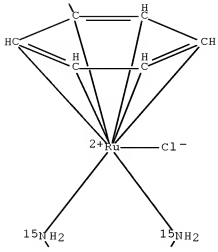
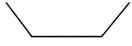
PAGE 2-A



PAGE 3-A



CM 2

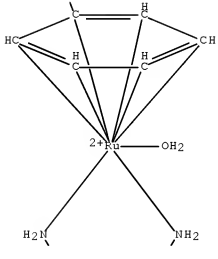
CRN 16919-18-9
CMF F6 P
CCI CCS

IT 461386-42-5P 461386-42-1P 873867-88-0P
873867-89-1P 873867-90-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(detection of sulfenato intermediate in reaction of glutathione and guanine with biphenyl ruthenium ethylenediamine anticancer complex)
RN 461386-42-5 HCAPLUS

CN Ruthenium(2+), aqua[(1,2,3,4,5,6-η)-1,1'-biphenyl](1,2-ethanediamine-κN,κN')- (9CI) (CA INDEX NAME)

PAGE 1-A

PAGE 2-A



PAGE 3-A

RN 461386-48-1 HCAPLUS
CN Ruthenium(1+), [(1,2,3,4,5,6-η)-1,1'-biphenyl](1,2-ethanediamine-κN,κN')(trifluoroacetato-κO)- (9CI) (CA INDEX NAME)

PAGE 1-A

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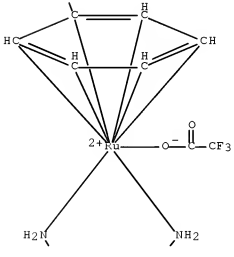
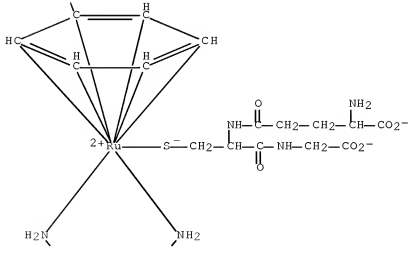


PAGE 3-A

RN 873867-88-0 HCAPLUS
CN Ruthenate(1-), [(1,2,3,4,5,6-η)-1,1'-biphenyl](1,2-ethanediamine-κN,κN')[L-γ-glutamyl-L-cysteinyl-κS-glycinato(3-)]-, dihydrogen (9CI) (CA INDEX NAME)

PAGE 1-A

PAGE 2-A



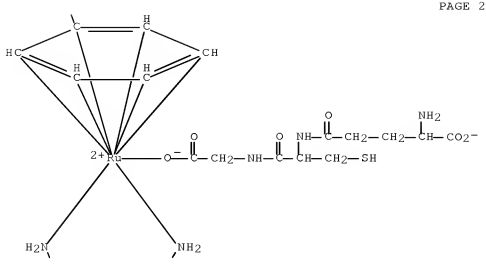
PAGE 3-A

●2 H+

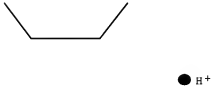
RN 873867-89-1 HCAPLUS
CN Ruthenium, [(1,2,3,4,5,6-η)-1,1'-biphenyl](1,2-ethanediamine-κN,κN')[L-γ-glutamyl-L-cysteinylglycinato(2-)-κO]-, conjugate monoacid (9CI) (CA INDEX NAME)

PAGE 1-A

PAGE 2-A



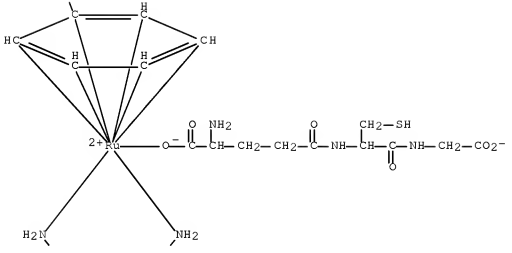
PAGE 3-A



RN 873867-90-4 HCAPLUS
CN Ruthenium, [(1,2,3,4,5,6-η)-1,1'-biphenyl](1,2-ethanediamine-κN,κN')[L-γ-glutamyl-κO1-L-cysteinylglycinato(2-)]-, conjugate monoacid (9CI) (CA INDEX NAME)

PAGE 1-A

PAGE 2-A



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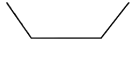


IT 873867-91-5P 873867-93-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(detection of sulfenato intermediate in reaction of glutathione and guanine with biphenyl ruthenium ethylenediamine anticancer complex)

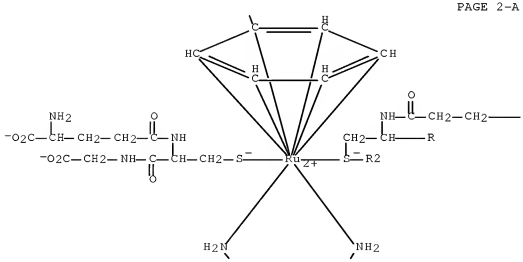
RN 873867-91-5 HCAPLUS

CN Ruthenate(5-), bis[(1,2,3,4,5,6-η)-1,1'-biphenyl]bis(1,2-ethanediamine-κN,κN')[μ-[L-γ-glutamyl-L-cysteinyl-κS:κS-glycinato(3-)]]bis[L-γ-glutamyl-L-cysteinyl-κS-glycinato(3-)]di-, hexahydrogen (9CI) (CA INDEX NAME)

PAGE 1-A

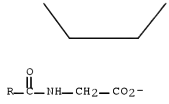
Ph

PAGE 2-A

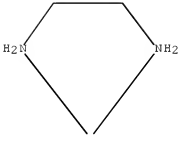


PAGE 2-B

PAGE 3-A



PAGE 4-A



* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

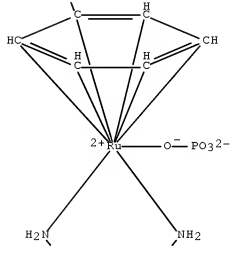
RN 873867-93-7 HCAPLUS

CN Ruthenium(1+), [(1,2,3,4,5,6-η)-1,1'-biphenyl](1,2-ethanediamine-κN,κN')[phosphato(3-)-κO]- (9CI) (CA INDEX NAME)

PAGE 1-A

Ph

PAGE 2-A



REFERENCE COUNT: 57 THERE ARE 57 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L28 ANSWER 21 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2005:386195 HCAPLUS Full-text
DOCUMENT NUMBER: 144:254216
TITLE: Rational design of organo-ruthenium anticancer compounds
AUTHOR(S): Gossens, Christian; Tavernelli, Ivano; Rothlisberger, Ursula
CORPORATE SOURCE: Laboratory of Computational Chemistry and Biochemistry, Institut des Sciences et Ingenierie Chimiques, Ecole Polytechnique Federale de Lausanne EPFL-BCH, Lausanne, CH-1015, Switz.
SOURCE: Chimia (2005), 59(3), 81-84
CODEN: CHIMAD; ISSN: 0009-4293
PUBLISHER: Swiss Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Organometallic Ru(II)-arene complexes are currently attracting increasing interest as anticancer compds. with the potential to overcome drawbacks of traditional drugs like cisplatin with respect to resistance, selectivity, and toxicity. Rational design of new potential pharmaceutical compds. requires a detailed understanding of structure-property relations at an atomic level. In vacuo d. functional theory (DFT) calcns., classical MD, and mixed QM/MM Car-Parrinello MD explicit solvent simulations to rationalize the binding mode of two series of anticancer Ru(II) arene complexes to double-stranded DNA (dsDNA) was performed. Binding energies between the metal centers and the surrounding ligands as well as proton affinities were calculated using DFT. Results support a pH-dependent mechanism for the activity of the RAPTA [Ru(η6-arene)X2(pta)] (pta = 1,3,5-triaza-7-phosphatricyclo[3.3.1.1]decane) compds. Adducts of the bifunctional RAPTA and the monofunctional [Ru(η6-p-cymene)Xen]+ series of compds. with the DNA sequence d(CCTCTG*G*TCTCC)/d(GGAGACCAGAGG), where G* are guanosine bases that bind to the Ru compds. through their N(7) atom, were studied. The resulting binding sites were characterized in QM/MM mol. dynamics simulations showing that DNA can easily adapt to accommodate the Ru compds.

CC 29-13 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 3, 4

IT 73-40-5, Guanine 7732-18-5, Water, properties 488127-65-7
877075-82-6 877075-84-8 877075-85-9
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(ligand binding energies; rational binding mode design and DFT calcns. of organo-ruthenium triazaphosphatricyclodecane anticancer compds. with double-stranded DNA)

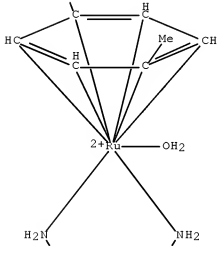
IT 488127-65-7
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(ligand binding energies; rational binding mode design and DFT calcns. of organo-ruthenium triazaphosphatricyclodecane anticancer

compds. with double-stranded DNA)
RN 488127-65-7 HCAPLUS
CN Ruthenium(2+), aqua(1,2-ethanediamine-κN1,κN2)[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]- (CA INDEX NAME)

PAGE 1-A

i-Pr

PAGE 2-A



REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L28 ANSWER 22 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2005:377557 HCAPLUS Full-text
DOCUMENT NUMBER: 143:126031
TITLE: Investigation of the role of Bax, p21/Waf1 and p53 as determinants of cellular responses in HCT116 colorectal cancer cells exposed to the novel cytotoxic ruthenium(II) organometallic agent, RM175
AUTHOR(S): Hayward, R. L.; Schornagel, Q. C.; Tente, R.; Macpherson, J. S.; Aird, R. E.; Guichard, S.; Habtemariam, A.; Sadler, P.; Jodrell, D. I.
CORPORATE SOURCE: Cancer Research UK Edinburgh Oncology Unit, University of Edinburgh Cancer Research Centre, Edinburgh, EH4 2XR, UK
SOURCE: Cancer Chemotherapy and Pharmacology (2005), 55(6), 577-583
CODEN: CCPHDZ; ISSN: 0344-5704
PUBLISHER: Springer GmbH
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Ruthenium(II) organometallic complexes form monofunctional adducts with guanine in DNA in vitro and have a cytotoxic anticancer activity spectrum in preclin. models suggesting lack of cross-resistance with cisplatin. The primary cytotoxic lesion remains to be identified but the downstream mechanism of action is nevertheless of interest. Using isogenic derivs. of the HCT116 colorectal cancer cell line, we investigated the role of p53, p21/WAF1 and Bax in the cellular response to the novel ruthenium(II) organometallic complex RM175, [(η6-C6H5C6H5)RuCl (H2NCH2CH2NH2-N,N')]+ PF-6. Western blotting demonstrated dose-dependent accumulation of p53, Bax and p21/WAF1 within 48 h of the start of RM175 treatment in wild-type HCT116 cells. HCT116 wild-type and Bax-null cells arrested in the G1 and G2 phases of the cell cycle. This pattern of cell cycle arrest was not observed in p53-null or in p21/WAF1-null cells. Following RM175 treatment, HCT116 wild-type and p21/WAF1 null cells underwent a dose-dependent induction of apoptosis (Annexin-V and sub-G1 apoptosis assays). This apoptotic response was not observed in p53-null or Bax-null cells. In short-term sulforhodamine B assays, the IC50 for RM175 was 16 μM for p53-null HCT116, and 8 μM for wild-type cells (P<0.05). However, the sensitivity to RM175 in clonogenic assays at 16 days was independent of p53 status. These results identify determinants of the short-term in vitro response to RM175 demonstrating a role for p53 and p21/WAF1 in the growth arrest and for p53 and Bax in the apoptotic response. The mechanism of p53-independent suppression of long-term clonogenicity remains to be determined

CC 1-6 (Pharmacology)
IT Antitumor agents
Apoptosis
Cell cycle
Cytotoxic agents
(investigation of the role of Bax, p21/Waf1 and p53 as determinants of cellular responses in HCT116 colorectal cancer cells exposed to the

novel cytotoxic ruthenium(II) organometallic agent, RM175)

IT 336876-16-5
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(investigation of the role of Bax, p21/Waf1 and p53 as determinants of cellular responses in HCT116 colorectal cancer cells exposed to the novel cytotoxic ruthenium(II) organometallic agent, RM175)

IT 336876-16-5
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(investigation of the role of Bax, p21/Waf1 and p53 as determinants of cellular responses in HCT116 colorectal cancer cells exposed to the novel cytotoxic ruthenium(II) organometallic agent, RM175)

RN 336876-16-5 HCAPLUS

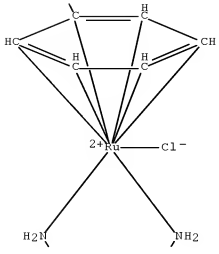
CN Ruthenium(1+), [(1,2,3,4,5,6-η)-1,1'-biphenyl]chloro(1,2-ethanediamine-κN1,κN2)-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 336876-15-4
CMF C14 H18 Cl N2 Ru
CCI CCS

PAGE 1-A

PAGE 2-A



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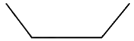


CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L28 ANSWER 23 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2005:301561 HCAPLUS Full-text
DOCUMENT NUMBER: 143:21754
TITLE: Competitive reactions of a ruthenium arene anticancer complex with histidine, cytochrome c and an

oligonucleotide
AUTHOR(S): Wang, Fuyi; Bella, Juraj; Parkinson, John A.; Sadler, Peter J.
CORPORATE SOURCE: School of Chemistry, University of Edinburgh, Edinburgh, EH9 3JJ, UK
SOURCE: JBIC, Journal of Biological Inorganic Chemistry (2005), 10(2), 147-155
CODEN: JJBCFA; ISSN: 0949-8257
PUBLISHER: Springer GmbH
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The ruthenium arene anticancer complex [(η6-bip)Ru(en)Cl][PF6] (1) (bip is biphenyl, en is ethylenediamine) reacted slowly with the amino acid L-histidine (L-His) in aqueous solution at 310 K. Two L-His adducts of 1 were separated by HPLC and identified by electrospray ionization mass spectrometry and NMR: an imidazole Nδ-bound complex [(η6-bip)Ru(en)(Nδ-L-His)]2+, and an Nε-bound complex [(η6-bip)Ru(en)(Nε-L-His)]2+. At 310 K, after 24 h only about 22% of complex 1 (2 mM) reacted with L-His, and of the unreacted 1, 59% had hydrolyzed. In the presence of 100 mM NaCl, .apprx.90% of 1 remained unreacted. In aqueous solution or triethylammonium acetate (TEAA) buffer (pH 7.6), 15N-labeled 1 reacted with cytochrome c to give two monoruthenated protein adducts. The reaction reached equilibrium within 2 h by which time .apprx.50% of cytochrome c was ruthenated. On the basis of [1H, 15N] NMR data, one adduct may have Ru bound to the N-terminus, and the other to a carboxylate group on the protein. In TEAA buffer and at 310 K, more than 90% of the 14-mer oligonucleotide d(TATGTACCATGTAT) reacted with 2 mol Eq of 1 to give rise to monoruthenated and diruthenated oligonucleotide adducts. The presence of cytochrome c (1 mol Eq) or L-His (4 mol Eq) had little effect on the course of the reaction with the oligonucleotide. In cells, DNA (or RNA) may be a favored reaction site for this Ru anticancer complex.

CC 6-7 (General Biochemistry)
Section cross-reference(s): 1, 29

IT 71-00-1, L-Histidine, biological studies 9007-43-6, Cytochrome c, biological studies 336876-16-5 853049-06-6
RL: BSU (Biological study, unclassified); CPS (Chemical process); PEP (Physical, engineering or chemical process); PYP (Physical process); BIOL (Biological study); PROC (Process)
(ruthenium arene anticancer complex competitive reactions with histidine, cytochrome c and deoxyribooligonucleotide)

IT 336876-16-5
RL: BSU (Biological study, unclassified); CPS (Chemical process); PEP (Physical, engineering or chemical process); PYP (Physical process); BIOL (Biological study); PROC (Process)
(ruthenium arene anticancer complex competitive reactions with histidine, cytochrome c and deoxyribooligonucleotide)

RN 336876-16-5 HCAPLUS

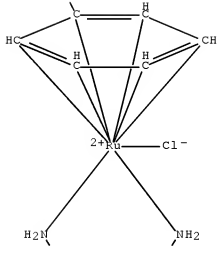
CN Ruthenium(1+), [(1,2,3,4,5,6-η)-1,1'-biphenyl]chloro(1,2-ethanediamine-κN1,κN2)-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 336876-15-4
CMF C14 H18 Cl N2 Ru
CCI CCS

PAGE 1-A

PAGE 2-A



PAGE 3-A

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L28 ANSWER 24 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2005:63663 HCAPLUS Full-text
DOCUMENT NUMBER: 143:300867
TITLE: Conformation of DNA Modified by Monofunctional Ru(II) Arene Complexes: Recognition by DNA Binding Proteins and Repair. Relationship to Cytotoxicity
AUTHOR(S): Novakova, Olga; Kasparkova, Jana; Bursova, Vendula; Hofr, Ctirad; Vojtiskova, Marie; Chen, Haimei; Sadler, Peter J.; Brabec, Viktor
CORPORATE SOURCE: Institute of Biophysics, Academy of Sciences of the Czech Republic, Brno, CZ-61265, Czech Rep.
SOURCE: Chemistry & Biology (2005), 12(1), 121-129
CODEN: CBOLE2; ISSN: 1074-5521
PUBLISHER: Cell Press
DOCUMENT TYPE: Journal
LANGUAGE: English

AB We analyzed DNA duplexes modified at central guanine residues by monofunctional Ru(II) arene complexes [(η6-arene)Ru(II)(en)(Cl)]+ (arene = tetrahydroanthracene or p-cymene, Ru-THA or Ru-CYM, resp.). These two complexes were chosen as representatives of two different classes of Ru(II) arene compds. for which initial studies revealed different binding modes: one that may involve DNA intercalation (tricyclic-ring Ru-THA) and the other (mono-ring Ru-CYM) that may not. Ru-THA is .apprx.20 times more toxic to cancer cells than Ru-CYM. The adducts of Ru-THA and Ru-CYM have contrasting effects on the conformation, thermodn. stability, and polymerization of DNA in vitro. In addition, the adducts of Ru-CYM are removed from DNA more efficiently than those of Ru-THA. Interestingly, the mammalian nucleotide excision repair system has low efficiency for excision of ruthenium adducts compared to cisplatin intra-strand crosslinks.

CC 6-2 (General Biochemistry)
Section cross-reference(s): 1

IT Antitumor agents
Human
Molecular recognition
(effect of monofunctional Ru(II) arene complexes on DNA conformation, recognition by DNA binding proteins, repair and relationship to antitumor cytotoxicity)

IT 65684-77-7 386722-45-8
RL: PAC (Pharmacological activity); RCT (Reactant); THU

(Therapeutic use); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)
(effect of monofunctional Ru(II) arene complexes on DNA conformation, recognition by DNA binding proteins, repair and relationship to antitumor cytotoxicity)

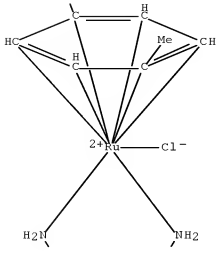
IT 65684-77-7 386722-45-8
RL: PAC (Pharmacological activity); RCT (Reactant); THU (Therapeutic use); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)
(effect of monofunctional Ru(II) arene complexes on DNA conformation, recognition by DNA binding proteins, repair and relationship to antitumor cytotoxicity)

RN 65684-77-7 HCAPLUS

CN Ruthenium(1+), chloro(1,2-ethanediamine-N,N')[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]- (9CI) (CA INDEX NAME)

PAGE 1-A

PAGE 2-A



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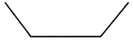
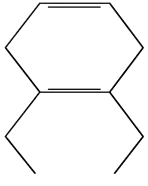


RN 386722-45-8 HCAPLUS
CN Ruthenium(1+), chloro(1,2-ethanediamine-κN,κN')[(5,6,7,8,8a,10a-η)-1,4,9,10-tetrahydroanthracene]-(9CI) (CA INDEX NAME)

PAGE 1-A



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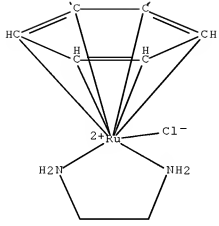

REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L28 ANSWER 25 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2004:965262 HCAPLUS Full-text
DOCUMENT NUMBER: 141:395672
TITLE: Preparation of ruthenium(II) complexes for the treatment of tumors
INVENTOR(S): Habtemariam, Abraha; Sadler, Peter John
PATENT ASSIGNEE(S): The University Court of the University of Edinburgh, UK
SOURCE: PCT Int. Appl., 38 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004096819	A1	20041111	WO 2004-GB1837	20040429
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2004234127	A1	20041111	AU 2004-234127	20040429
CA 2523811	A1	20041111	CA 2004-2523811	20040429
EP 1618116	A1	20060125	EP 2004-730284	20040429

EP 1618116	B1	20080528				
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BR 2004009768	A	20060509	BR 2004-9768		20040429	
CN 1780845	A	20060531	CN 2004-80011293		20040429	
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JP 2006525982	T	20061116	JP 2006-506200		20040429	
NZ 543184	A	20080328	NZ 2004-543184		20040429	
AT 397003	T	20080615	AT 2004-730284		20040429	
ES 2308176	T3	20081201	ES 2004-730284		20040429	
ZA 2005008513	A	20060726	ZA 2005-8513		20051020	
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KR 2006023526	A	20060314	KR 2005-720446		20051027	
MX 2005011653	A	20060627	MX 2005-11653		20051028	
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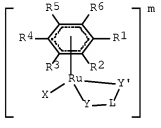
NO 2005005650	A	20060119	NO 2005-5650		20051130	
HK 1084954	A1	20080822	HK 2006-107152		20060623	
PRIORITY APPLN. INFO.:			GB 2003-9894	A	20030430	
			WO 2004-GB1837	W	20040429	

OTHER SOURCE(S): CASREACT 141:395672; MARPAT 141:395672

GI



I

AB The preparation of title compds. I, (R1-R6 = H, C1-6 alkyl, C2-6 alkenyl, C2-6 alkynyl, hydroxy C1-6 alkyl, amino C1-6 alkyl, halo, OH, alkoxycarbonyl, aminocarbonyl, acyl, sulfonyl, amidosulfonyl, aryloxy, C1-6 alkoxy, C1-6 alkylthio, etc.; X = neutral or neg. charged O, N, or S donor ligand, halo; Y, Y' = organoamino; L = 1,2-arylene, 1,2-(C5-8)cycloalkylene, etc.; m = 0, +1, +2, -1, -2), useful in the treatment and/or prevention of cancer, is described. Thus, reaction of [Ru(biphenyl)Cl2]2 with 1,2-diaminobenzene in MeOH/H2O followed by treatment with NH4PF6 gave 54% [(η6-biphenyl)Ru(o-phenylenediamine)Cl]PF6 (biol. data for ovarian cancer cell is given).

IC ICM C07F017-02

CC 29-13 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 1

IT Antitumor agents
Cytotoxicity
(preparation of aryl ruthenium amine complexes for treatment of tumors)

IT 154975-96-9P 790299-58-0P 790299-60-4P
790299-62-6P 790299-64-8P 790299-66-0P
790299-68-2P 790299-69-3P 790299-70-6P

RL: BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of aryl ruthenium amine complexes for treatment of tumors)

IT 154975-96-9P 790299-58-0P 790299-60-4P
790299-62-6P 790299-64-8P 790299-66-0P
790299-68-2P 790299-69-3P 790299-70-6P
RL: BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of aryl ruthenium amine complexes for treatment of tumors)

RN 154975-96-9 HCAPLUS

CN Ruthenium(1+), (1,2-benzenediamine-κN,κN')chloro[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 154975-95-8
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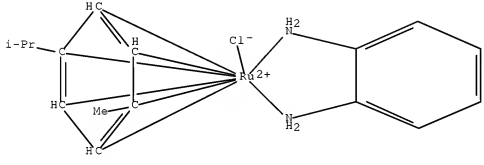
CCI CCS



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CRN 16919-18-9
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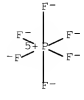
CCI CCS



RN 790299-58-0 HCAPLUS

CN Ruthenium(1+), (1,2-benzenediamine-κN1,κN2)[(1,2,3,4,5,6-η)-1,1'-biphenyl]chloro-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

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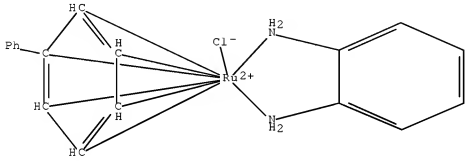
CRN 790299-57-9
CMF C18 H18 Cl N2 Ru
CCI CCS



CM 2

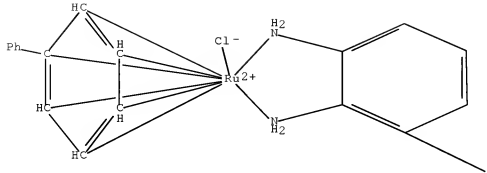
CRN 16919-18-9
CMF F6 P
CCI CCS

RN 790299-60-4 HCAPLUS
CN Ruthenium(2+), [μ-([1,1'-biphenyl]-2,2',3,3'-tetramine-κN2,κN3:κN2',κN3')]bis[(1,2,3,4,5,6-η)-1,1'-biphenyl]dichlorodi-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

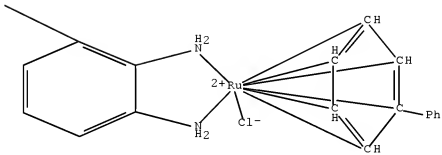
CRN 790299-59-1
CMF C36 H34 Cl2 N4 Ru2
CCI CCS

PAGE 1-A



PAGE 2-A

PAGE 2-B



CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 790299-62-6 HCAPLUS
CN Ruthenium(1+), (1,2-benzenediamine-κN1,κN2)chloro[(1,2,3,4,4a,9a-η)-9,10-dihydroanthracene]-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 790299-61-5
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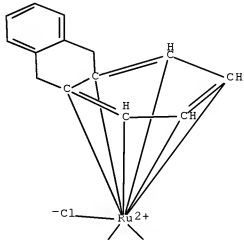
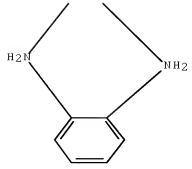
CCI CCS

PAGE 1-A





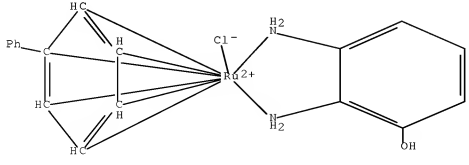
CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 790299-64-8 HCAPLUS
CN Ruthenium(1+), [(1,2,3,4,5,6-η)-1,1'-biphenyl]chloro[2,3-di(amino-κN)phenol]-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 790299-63-7
CMF C18 H18 Cl N2 O Ru
CCI CCS



CM 2

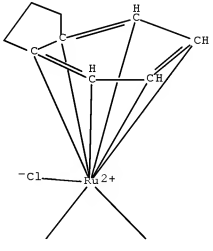
CRN 16919-18-9
CMF F6 P
CCI CCS

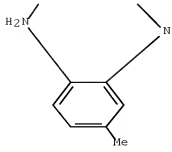
RN 790299-66-0 HCAPLUS
CN Ruthenium(1+), chloro[(3a,4,5,6,7,7a-η)-2,3-dihydro-1H-indene](4-methyl-1,2-benzenediamine-κN1,κN2)-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 790299-65-9
CMF C16 H20 Cl N2 Ru
CCI CCS

PAGE 1-A





CM 2

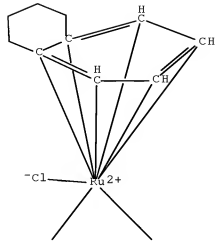
CRN 16919-18-9
CMF F6 P
CCI CCS

RN 790299-68-2 HCAPLUS
CN Ruthenium(1+), chloro(4-nitro-1,2-benzenediamine-κN,κN')[(4a,5,6,7,8,8a-η)-1,2,3,4-tetrahydronaphthalene]-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 790299-67-1
CMF C16 H19 Cl N3 O2 Ru
CCI CCS

PAGE 1-A



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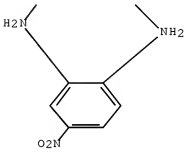


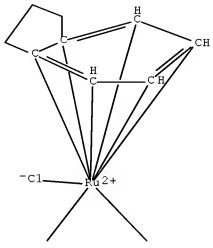
CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 790299-69-3 HCAPLUS

CN Ruthenium(1+), chloro[2,3-di(amino-κN)-9,10-anthracenedione][(3a,4,5,6,7,7a-η)-2,3-dihydro-1H-indene]-, chloride (9CI) (CA INDEX NAME)

PAGE 1-A



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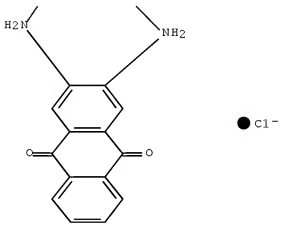
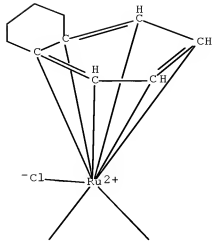


RN 790299-70-6 HCAPLUS

CN Ruthenium(1+), chloro[2,3-di(amino-κN)-9,10-anthracenedione][(4a,5,6,7,8,8a-η)-1,2,3,4-tetrahydronaphthalene]-, chloride (9CI) (CA INDEX NAME)

PAGE 1-A



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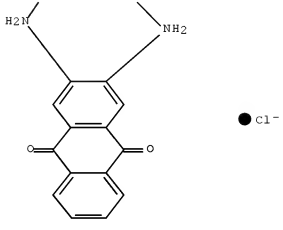


REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

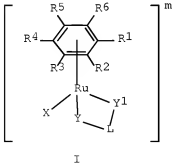
L28 ANSWER 26 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2004:41485 HCAPLUS Full-text
DOCUMENT NUMBER: 140:94145
TITLE: Preparation of half-sandwich ruthenium anticancer complexes
INVENTOR(S): Sadler, Peter John; Fernandez Lainez, Rafael; Habtemariam, Abraba; Melchart, Michael; Jodrell, Duncan Ian
PATENT ASSIGNEE(S): The University Court, the University of Edinburgh, UK
SOURCE: PCT Int. Appl., 46 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent

LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004005304	A1	20040115	WO 2003-GB2879	20030704
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2491640	A1	20040115	CA 2003-2491640	20030704
AU 2003251159	A1	20040123	AU 2003-251159	20030704
AU 2003251159	B2	20081106		
BR 20030124470	A	20050426	BR 2003-12470	20030704
EP 1558620	A1	20050803	EP 2003-762788	20030704
EP 1558620	B1	20080910		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
CN 1665826	A	20050907	CN 2003-816000	20030704
CN 100362005	C	20080116		
JP 2005536487	T	20051202	JP 2004-518958	20030704
NZ 538005	A	20070831	NZ 2003-538005	20030704
AT 407937	T	20080915	AT 2003-762788	20030704
MX 2005000314	A	20050920	MX 2005-314	20050105
ZA 2005000908	A	20060329	ZA 2005-908	20050201
NO 2005000640	A	20050322	NO 2005-640	20050204
US 20060058270	A1	20060316	US 2005-520239	20050718

PRIORITY APPLN. INFO.: GB 2002-15526 A 20020705
WO 2003-GB2879 W 20030704

OTHER SOURCE(S): CASREACT 140:94145; MARPAT 140:94145
GI



I

AB The preparation of half-sandwich ruthenium(II) compds. I (R1-R6 = independent to each other H, C1-6 alkyl, C2-6 alkenyl, C2-6 alkynyl, hydroxy(C1-6)alkyl, amino(C1-6)alkyl, halo, alkoxycarbonyl, aminocarbonyl, SO3H, aminosulfonyl, aryloxy, C1-6 alkoxy, C1-6 alkylthio, etc.; X = O-, N-, S- donor ligand, halo, etc.; Y-L-Y1 = bidentate ligand bearing neg. charge, etc.; m = -1, 0, 1), useful in the treatment and/or prevention of cancer, is described. Thus, reaction of [(η6-p-cymene)RuCl2]2 with sodium acetylacetonate monohydrate in Me2CO gave 59% title compound, [(η6-p-cymene)RuCl(H3CCOCHCOCH3-O,O)].

IC ICM C07F015-00

CC 29-13 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 1

IT Antitumor agents
(preparation of half-sandwich ruthenium anticancer complexes)

IT 128642-48-8P
RL: BSU (Biological study, unclassified); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(preparation of half-sandwich ruthenium anticancer complexes)

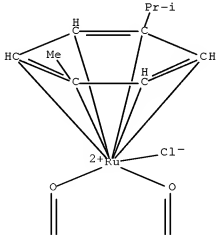
IT 642488-34-4P 642488-37-7P 642488-40-2P 642488-41-3P 642488-45-7P 642488-48-0P
RL: BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of half-sandwich ruthenium anticancer complexes)

IT 128642-48-8P
RL: BSU (Biological study, unclassified); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(preparation of half-sandwich ruthenium anticancer complexes)

RN 128642-48-8 HCAPLUS

CN Ruthenium, chloro[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene](2,4-pentanedionato-κO1,κO4)- (CA INDEX NAME)

PAGE 1-A



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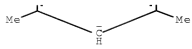
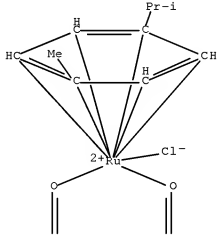


IT 642488-34-4P 642488-37-7P 642488-40-2P
642488-41-3P 642488-45-7P 642488-48-0P
RL: BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of half-sandwich ruthenium anticancer complexes)

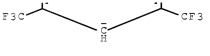
RN 642488-34-4 HCAPLUS

CN Ruthenium, chloro(1,1,1,5,5,5-hexafluoro-2,4-pentanedionato-κO2,κO4)[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]- (CA INDEX NAME)

PAGE 1-A



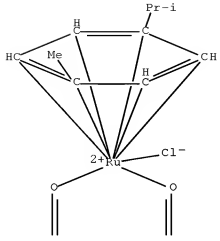
PAGE 2-A



RN 642488-37-7 HCAPLUS

CN Ruthenium, chloro(1,3-diphenyl-1,3-propanedionato-κO1,κO3)[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]- (CA INDEX NAME)

PAGE 1-A



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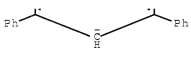
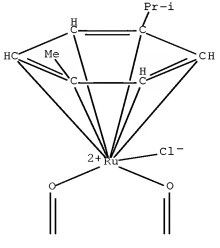


RN 642488-40-2 HCAPLUS

CN Ruthenium, chloro[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene](2,2,6,6-tetramethyl-3,5-heptanedionato-κO3,κO5)- (CA INDEX NAME)

PAGE 1-A



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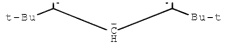
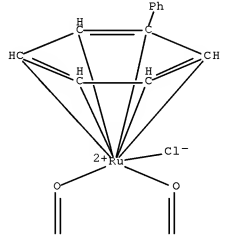


RN 642488-41-3 HCAPLUS
CN Ruthenium, [(1,2,3,4,5,6-η)-1,1'-biphenyl]chloro(2,4-pentanedionato-κO2,κO4)- (CA INDEX NAME)

PAGE 1-A



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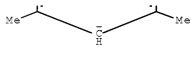
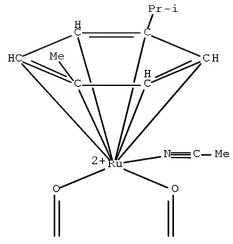


RN 642488-45-7 HCAPLUS
CN Ruthenium(1+), (acetonitrile)[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene](2,4-pentanedionato-κO,κO')-, tetrafluoroborate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 642488-44-6
CMF C17 H24 N O2 Ru
CCI CCS

PAGE 1-A



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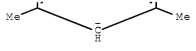
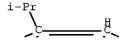


CM 2

CRN 14874-70-5
CMF B F4
CCI CCS

RN 642488-48-0 HCAPLUS
CN Ruthenium, dichloro[μ-[3,4-di(acetyl-κO)-2,5-hexanedionato(2-)-κO:κO']]bis[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]di- (9CI) (CA INDEX NAME)

PAGE 1-A



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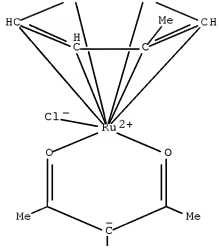
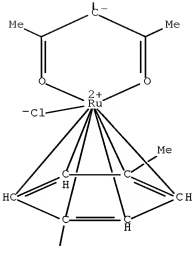


PAGE 3-A



PAGE 4-A

REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L28 ANSWER 27 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2004:1857 HCAPLUS Full-text
DOCUMENT NUMBER: 140:181608
TITLE: Kinetics of aquation and anation of ruthenium(II) arene anticancer complexes, acidity and X-ray structures of aqua adducts
AUTHOR(S): Wang, Fuyi; Chen, Haimei; Parsons, Simon; Oswald, Iain D. H.; Davidson, James E.; Sadler, Peter J.
CORPORATE SOURCE: School of Chemistry, University of Edinburgh, Edinburgh, EH9 3JJ, UK
SOURCE: Chemistry--A European Journal (2003), 9(23), 5810-5820 CODEN: CEUJED; ISSN: 0947-6539
PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 140:181608

AB The aqua adducts of the anticancer complexes [(η6-X)Ru(en)Cl] [PF6] (X = biphenyl (Bip) 1, X = 5,8,9,10-tetrahydroanthracene (THA) 2, X = 9,10-dihydroanthracene (DHA) 3; en = ethylenediamime) were separated by HPLC and characterized by mass spectrometry as the products of hydrolysis in H2O. The x-ray structures of the aqua complexes [(η6-X)Ru(en)Y] [PF6]n, X = Bip, Y = 0.5H2O/0.5OH, n = 1.5 (4), X = THA, Y = 0.5H2O/0.5OH, n = 1.5 (5A), X = THA, Y = H2O, n = 2 (5B), and X = DHA, Y = H2O, n = 2(6), are reported. In complex 4 there is a large propeller twist of 45° of the pendant Ph ring with respect to the coordinated Ph ring. Although the THA ligand in 5A and 5B is relatively

flat, the DHA ring system in 6 is markedly bent (hinge bend .apprx.35°) as in the chloro complex 3 (41°). The rates of aquation of 1-3 determined by UV/visible spectroscopy at various ionic strengths and temps. (1.23-2.59 × 10-3s-1 at 298 K, I = 0.1M) are >20× faster than that of cisplatin. The reverse, anation reactions were very rapid on addition of 100 mM NaCl (a similar concentration to that in blood plasma). The aquation and anation reactions were about two times faster for the DHA and THA complexes compared to the biphenyl complex. The hydrolysis reactions appear to occur by an associative pathway. The pKa values of the aqua adducts were determined by 1H NMR spectroscopy as 7.71 for 4, 8.01 for 5 and 7.89 for 6. At physiol.-relevant concns. (0.5-5 μM) and temperature (310 K), the complexes will exist in blood plasma as >89% chloro complex, whereas in the cell nucleus significant amts. (45-65%) of the more reactive aqua adducts would be formed together with smaller amts. of the hydroxo complexes (9-25%, pH 7.4, [Cl-] = 4 mM).

CC 29-13 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 22, 75

IT 660428-11-5P 660428-12-6P 660428-13-7P
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(crystal structure; kinetics of aquation and anation of ruthenium(II) arene anticancer complexes, acidity and crystal structures of aqua adducts)

IT 75701-00-7
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(kinetics of aquation and anation of ruthenium(II) arene anticancer complexes, acidity and crystal structures of aqua adducts)

IT 336876-16-5 386722-46-9 386722-50-5
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(kinetics of aquation and anation of ruthenium(II) arene anticancer complexes, acidity and crystal structures of aqua adducts)

IT 660428-11-5P 660428-12-6P 660428-13-7P
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(crystal structure; kinetics of aquation and anation of ruthenium(II) arene anticancer complexes, acidity and crystal structures of aqua adducts)

RN 660428-11-5 HCAPLUS

CN Ruthenium(2+), aqua[(1,2,3,4,5,6-η)-1,1'-biphenyl](1,2-ethanediamine-κN,κN')-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

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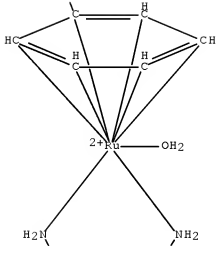
CRN 461386-42-5
CMF C14 H20 N2 O Ru
CCI CCS

PAGE 1-A

PAGE 2-A



PAGE 3-A

CM 2

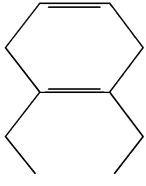
CRN 16919-18-9
CMF F6 P
CCI CCS

RN 660428-12-6 HCAPLUS
CN Ruthenium(2+), aqua(1,2-ethanediamine-κN,κN')[(5,6,7,8,8a,10a-η)-1,4,9,10-tetrahydroanthracene]-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 488127-60-2
CMF C16 H24 N2 O Ru
CCI CCS

PAGE 1-A



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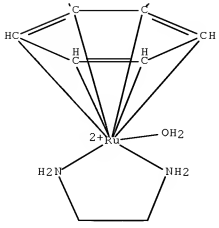

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 660428-13-7 HCAPLUS
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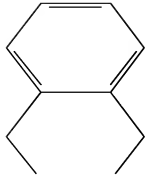
CM 1

CRN 488127-63-5
CMF C16 H22 N2 O Ru
CCI CCS

PAGE 1-A



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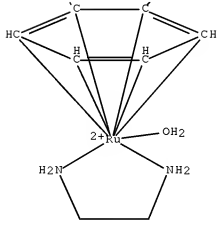


CM 2

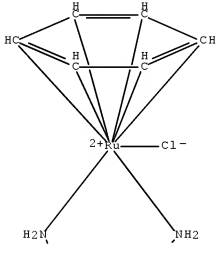
CRN 16919-18-9
CMF F6 P
CCI CCS

IT 75701-00-7
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(kinetics of aquation and anation of ruthenium(II) arene anticancer complexes, acidity and crystal structures of aqua adducts)
RN 75701-00-7 HCAPLUS
CN Ruthenium(1+), (η6-benzene)chloro(1,2-ethanediamine-κN1,κN2)-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 65684-75-5
CMF C8 H14 Cl N2 Ru
CCI CCS

PAGE 1-A



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CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

IT 336876-16-5 386722-46-9 386722-50-5
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(kinetics of aquation and anation of ruthenium(II) arene anticancer complexes, acidity and crystal structures of aqua adducts)

RN 336876-16-5 HCAPLUS

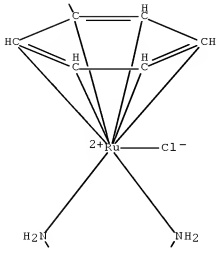
CN Ruthenium(1+), [(1,2,3,4,5,6-η)-1,1'-biphenyl]chloro(1,2-ethanediamine-κN1,κN2)-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 336876-15-4
CMF C14 H18 Cl N2 Ru
CCI CCS

PAGE 1-A

PAGE 2-A



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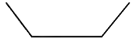

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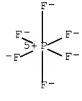
CCI CCS

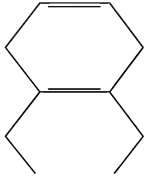


RN 386722-46-9 HCAPLUS
CN Ruthenium(1+), chloro(1,2-ethanediamine-
κN1,κN2)[(5,6,7,8,8a,10a-η)-1,4,9,10-tetrahydroanthracene]-
, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 386722-45-8
CMF C16 H22 Cl N2 Ru
CCI CCS

PAGE 1-A



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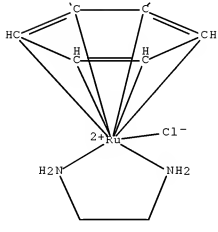

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 386722-50-5 HCAPLUS
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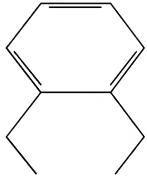
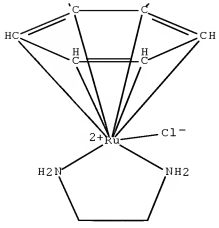
CM 1

CRN 386722-49-2
CMF C16 H20 Cl N2 Ru
CCI CCS

PAGE 1-A





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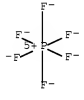


REFERENCE COUNT: 42 THERE ARE 42 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L28 ANSWER 28 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2003:726446 HCAPLUS Full-text
DOCUMENT NUMBER: 139:345326
TITLE: DNA Interactions of Monofunctional Organometallic Ruthenium(II) Antitumor Complexes in Cell-free Media
AUTHOR(S): Novakova, Olga; Chen, Haimei; Vrana, Oldrich; Rodger, Alison; Sadler, Peter J.; Brabec, Viktor
CORPORATE SOURCE: Institute of Biophysics, Academy of Sciences of the Czech Republic, Brno, CZ-61265, Czech Rep.
SOURCE: Biochemistry (2003), 42(39), 11544-11554
CODEN: BICHAW; ISSN: 0006-2960
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Modifications of natural DNA in a cell-free medium by antitumor monodentate Ru(II) arene compds. of the general formula [(η6-arene)Ru(en)Cl]+ (arene = biphenyl, dihydroanthracene, tetrahydroanthracene, p-cymene, or benzene; en = ethylenediamine) were studied by atomic absorption, melting behavior,

transcription mapping, circular and linear dichroism, plasmid unwinding, competitive ethidium displacement, and differential pulse polarog. The results indicate that these complexes bind preferentially to guanine residues in double-helical DNA. The data are consistent with DNA binding of the complexes containing biphenyl, dihydroanthracene, or tetrahydroanthracene ligands that involves combined coordination to G N7 and noncovalent, hydrophobic interactions between the arene ligand and DNA, which may include arene intercalation and minor groove binding. In contrast, the single hydrocarbon rings in the p-cymene and benzene ruthenium complexes cannot interact with double-helical DNA by intercalation. Interestingly, the adducts of the complex containing p-cymene ligand, which has Me and iso-Pr substituents, distort the conformation and thermally destabilize double-helical DNA distinctly more than the adducts of the three multiring ruthenium arene compds. It has been suggested that the different character of conformational alterations induced in DNA, and the resulting thermal destabilization, may affect differently further "downstream" effects of damaged DNA and consequently may result in different biol. effects of this new class of metal-based antitumor compds. The results point to a unique profile of DNA binding for Ru(II) arene compds., suggesting that a search for new anticancer compds. based on this class of complexes may also lead to an altered profile of biol. activity in comparison with that of metal-based antitumor drugs already used in the clinic or currently on clin. trials.

CC 1-3 (Pharmacology)

IT Antitumor agents
Transcription, genetic
(DNA interactions of monofunctional organometallic ruthenium(II) antitumor complexes in cell-free media)

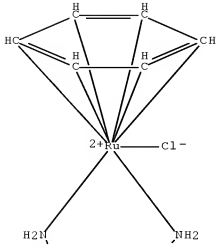
IT 65684-75-5P 65684-77-7P 336876-15-4P
386722-45-8P 386722-49-2P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(DNA interactions of monofunctional organometallic ruthenium(II) antitumor complexes in cell-free media)

IT 65684-75-5P 65684-77-7P 336876-15-4P
386722-45-8P 386722-49-2P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(DNA interactions of monofunctional organometallic ruthenium(II) antitumor complexes in cell-free media)

RN 65684-75-5 HCAPLUS

CN Ruthenium(1+), (η6-benzene)chloro(1,2-ethanediamine-κN1,κN2)- (CA INDEX NAME)

PAGE 1-A



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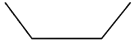


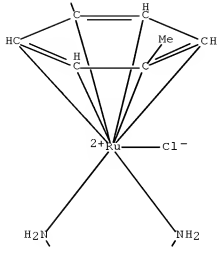
RN 65684-77-7 HCAPLUS

CN Ruthenium(1+), chloro(1,2-ethanediamine-N,N')[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]- (9CI) (CA INDEX NAME)

PAGE 1-A

i-Pr

PAGE 2-A

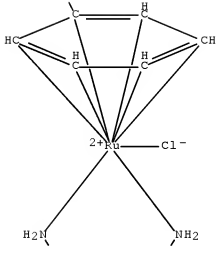


PAGE 3-A

RN 336876-15-4 HCAPLUS
CN Ruthenium(1+), [(1,2,3,4,5,6-η)-1,1'-biphenyl]chloro(1,2-ethanediamine-κN,κN')- (9CI) (CA INDEX NAME)

PAGE 1-A

PAGE 2-A



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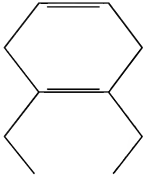
RN 386722-45-8 HCAPLUS

CN Ruthenium(1+), chloro(1,2-ethanediamine-κN,κN')[(5,6,7,8,8a,10a-η)-1,4,9,10-tetrahydroanthracene]-(9CI) (CA INDEX NAME)

PAGE 1-A



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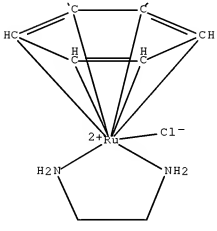
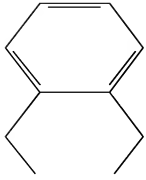


RN 386722-49-2 HCAPLUS

CN Ruthenium(1+), chloro[(1,2,3,4,4a,9a-η)-9,10-dihydroanthracene](1,2-ethanediamine-κN,κN')- (9CI) (CA INDEX NAME)

PAGE 1-A



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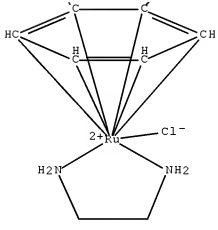

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L28 ANSWER 29 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2003:576969 HCAPLUS Full-text
DOCUMENT NUMBER: 140:181590
TITLE: The synthesis, structural characterization, and in vitro anti-cancer activity of chloro(p-cymene) complexes of ruthenium(II) containing a disulfoxide ligand
AUTHOR(S): Huxham, Lynsey A.; Cheu, Elizabeth L. S.; Patrick, Brian O.; James, Brian R.
CORPORATE SOURCE: Department of Chemistry, University of British Columbia, Vancouver, BC, V6T 1Z1, Can.
SOURCE: Inorganica Chimica Acta (2003), 352, 238-246

CODEN: ICHAA3; ISSN: 0020-1693
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 140:181590

AB Two diruthenium(II) complexes [RuCl2(p-cymene)]2(μ-BESE) (1), [RuCl2(p-cymene)]2(μ-BESP) (2), and mononuclear [RuCl(p-cymene)(BESE)]PF6 (3), containing the disulfoxides BESE and BESP, were synthesized and characterized by elemental anal., and NMR and IR spectroscopies, and contain S-bound sulfoxide groups; the disulfoxides are EtS(O)(CH2)nS(O)Et, where n = 2 (BESE) or 3 (BESP). Complexes 1 and 3 were also characterized by x-ray crystallog. Preliminary in vitro tests of 1 and 3 were conducted using the MTT assay, which measures mitochondrial dehydrogenase activity as an indication of cell viability. These complexes showed in vitro anti-cancer activity against a human mammary cancer cell line (MDA-MB-435s) with IC50 values of 360 and 55 μM, resp.

CC 29-13 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 1, 75

IT Antitumor agents
Human
Mammary gland, neoplasm
(in vitro anti-cancer activity of mono- and dinuclear ruthenium(II) chloro(p-cymene) disulfoxide complexes against human mammary cancer cell line (MDA-MB-435s))

IT 658044-16-7P
RL: PAC (Pharmacological activity); PRP (Properties); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(preparation, crystal structure, and antitumor activity against human mammary cancer cell line (MDA-MB-435s))

IT 658044-16-7P
RL: PAC (Pharmacological activity); PRP (Properties); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(preparation, crystal structure, and antitumor activity against human mammary cancer cell line (MDA-MB-435s))

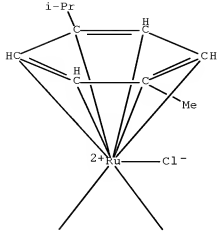
RN 658044-16-7 HCAPLUS

CN Ruthenium(1+), chloro[rel-1-[(R)-ethylsulfinyl-κS]-2-[(S)-ethylsulfinyl-κS]ethane][(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 658044-15-6
CMF C16 H28 Cl O2 Ru S2
CCI CCS

PAGE 1-A



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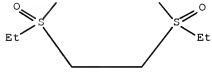
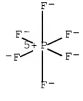


CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS



REFERENCE COUNT: 48 THERE ARE 48 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L28 ANSWER 30 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2002:482176 HCAPLUS Full-text
DOCUMENT NUMBER: 138:130575

TITLE: In vitro and in vivo activity and cross resistance profiles of novel ruthenium (II) organometallic arene complexes in human ovarian cancer

AUTHOR(S): Aird, R. E.; Cummings, J.; Ritchie, A. A.; Muir, M.; Morris, R. E.; Chen, H.; Sadler, P. J.; Jodrell, D. I.

CORPORATE SOURCE: Cancer Research UK, Edinburgh Oncology Unit, Western General Hospital, Edinburgh, EH4 2XR, UK

SOURCE: British Journal of Cancer (2002), 86(10), 1652-1657
CODEN: BJCAAI; ISSN: 0007-0920

PUBLISHER: Nature Publishing Group

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Ruthenium complexes offer the potential of reduced toxicity, a novel mechanism of action, non-cross resistance, and a different spectrum of activity compared to Pt containing compds. Thirteen novel Rum(II) organometallic arene complexes were evaluated for activity (in vitro and in vivo) in models of human ovarian cancer, and cross-resistance profiles established in cisplatin and multi-drug-resistant variants. A broad range of IC50 values was obtained (0.5 to >100 μM) in A2780 parental cells with 2 compds. (RM175 and HC29) equipotent to carboplatin (6 μM), and the most active compound (HC11) equipotent to cisplatin (0.6 μM). Stable bi-dentate chelating ligands (ethylenediamine), a more hydrophobic arene ligand (tetrahydroanthracene) and a single ligand exchange center (chloride) were associated with increased activity. None of the 6 active Ru(II) compds. were cross-resistant in the A2780cis cell line, demonstrated to be 10-fold resistant to cisplatin/carboplatin by a mechanism involving, at least in part, silencing of MLH1 protein expression via methylation. Varying degrees of cross-resistance were observed in the P-170 glycoprotein overexpressing multi-drug-resistant cell line 2780AD that could be reversed by co-treatment with verapamil. In vivo activity was established with RM175 in the A2780 xenograft together with non-cross-resistance in the A2780cis xenograft and a lack of activity in the 2780AD xenograft. High activity coupled to non cross-resistance in cisplatin resistant models merit further development of this novel group of anticancer compds.

CC 1-3 (Pharmacology)

IT Antitumor agents
Human
Ovary, neoplasm
QSAR (quantitative structure-activity relationship)
(activity and cross resistance profiles of novel ruthenium (II) organometallic complexes in human ovarian cancer)

IT Antitumor agents
(resistance to; activity and cross resistance profiles of novel ruthenium (II) organometallic complexes in human ovarian cancer)

IT 75701-00-7 209854-78-4 336875-96-8 336876-02-9
336876-05-2 336876-08-5 336876-10-9
336876-16-5 336876-19-8 377759-82-5
386722-46-9 493037-44-8 493037-46-0
RL: PAC (Pharmacological activity); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(activity and cross resistance profiles of novel ruthenium (II) organometallic complexes in human ovarian cancer)

IT 75701-00-7 336876-02-9 336876-05-2
336876-08-5 336876-16-5 336876-19-8
377759-82-5 386722-46-9 493037-44-8
493037-46-0
RL: PAC (Pharmacological activity); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(activity and cross resistance profiles of novel ruthenium (II)

organometallic complexes in human ovarian cancer)

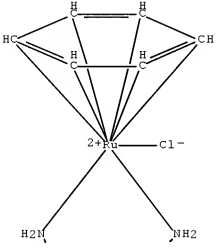
RN 75701-00-7 HCAPLUS

CN Ruthenium(1+), (η6-benzene)chloro(1,2-ethanediamine-κN1,κN2)-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 65684-75-5
CMF C8 H14 Cl N2 Ru
CCI CCS

PAGE 1-A



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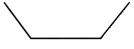


CM 2

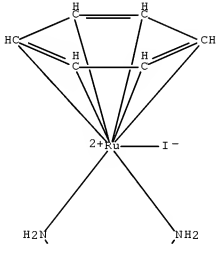
CRN 16919-18-9
CMF F6 P
CCI CCS

RN 336876-02-9 HCAPLUS
CN Ruthenium(1+), (η6-benzene)(1,2-ethanediamine-κN,κN')iodo-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 336876-01-8
CMF C8 H14 I N2 Ru
CCI CCS

PAGE 1-A



PAGE 2-A

CM 2

CRN 16919-18-9
CMF F6 P

CCI CCS

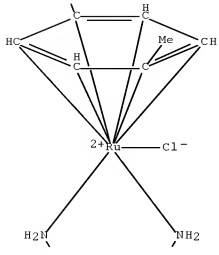
RN 336876-05-2 HCAPLUS
CN Ruthenium(1+), chloro(1,2-ethanediamine-κN1,κN2)[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

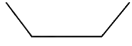
CRN 65684-77-7
CMF C12 H22 Cl N2 Ru
CCI CCS

PAGE 1-A

PAGE 2-A



PAGE 3-A



CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 336876-08-5 HCAPLUS
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CM 1

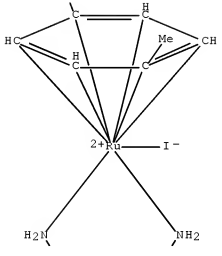
CRN 336876-07-4

CMF C12 H22 I N2 Ru
CCI CCS

PAGE 1-A

i-Pr

PAGE 2-A



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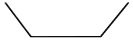

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 336876-16-5 HCAPLUS
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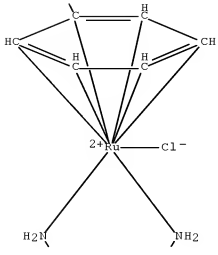
CM 1

CRN 336876-15-4
CMF C14 H18 Cl N2 Ru
CCI CCS

PAGE 1-A

Ph

PAGE 2-A



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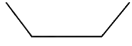

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 336876-19-8 HCAPLUS
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CM 1

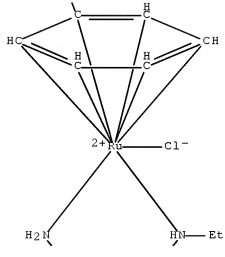
CRN 336876-18-7

CMF C16 H22 Cl N2 Ru
CCI CCS

PAGE 1-A

Ph

PAGE 2-A



PAGE 3-A

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 377759-82-5 HCAPLUS
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CM 1

CRN 377759-81-4
CMF C10 H16 Cl N2 O2 Ru
CCI CCS

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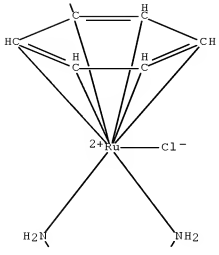

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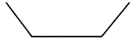


CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

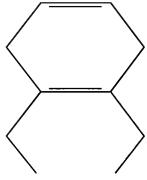
RN 386722-46-9 HCAPLUS
CN Ruthenium(1+), chloro(1,2-ethanediamine-
κN1,κN2)[(5,6,7,8,8a,10a-η)-1,4,9,10-tetrahydroanthracene]-
, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 386722-45-8

CMF C16 H22 Cl N2 Ru
CCI CCS

PAGE 1-A



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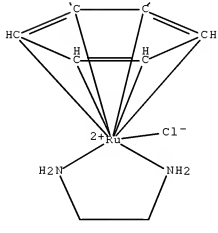

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 493037-44-8 HCAPLUS
CN Ruthenium(1+), chloro(1,2-ethanediamine-κN1,κN2)[ethyl (1,2,3,4,5,6-η)-benzoate]-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 493037-43-7
CMF C11 H18 Cl N2 O2 Ru
CCI CCS

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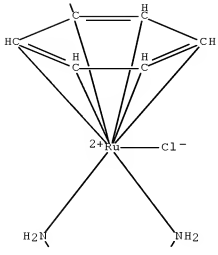
PAGE 2-A



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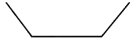


CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

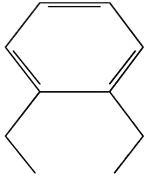
RN 493037-46-0 HCAPLUS
CN Ruthenium(1+), chloro[(1,2,3,4,4a,9a-η)-9,10-dihydroanthracene](N-ethyl-1,2-ethanediamine-κN,κN')-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 493037-45-9

CMF C18 H24 Cl N2 Ru
CCI CCS

PAGE 1-A



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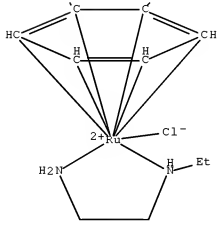

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

REFERENCE COUNT: 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L28 ANSWER 31 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2002:159911 HCAPLUS Full-text
DOCUMENT NUMBER: 136:355324
TITLE: Organometallic Ruthenium(II) Diamine Anticancer Complexes: Arene-Nucleobase Stacking and Stereospecific Hydrogen-Bonding in Guanine Adducts
AUTHOR(S): Chen, Haimei; Parkinson, John A.; Parsons, Simon; Coxall, Robert A.; Gould, Robert O.; Sadler, Peter J.
CORPORATE SOURCE: Department of Chemistry, University of Edinburgh, Edinburgh, EH9 3JJ, UK
SOURCE: Journal of the American Chemical Society (2002), 124(12), 3064-3082
CODEN: JACSAT; ISSN: 0002-7863
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 136:355324

AB Organometallic ruthenium(II) arene anticancer complexes of the type [(η6-arene)Ru(II)(en)Cl][PF6] (en = ethylenediamine) specifically target guanine bases of DNA oligomers and form monofunctional adducts. The structures of monofunctional adducts of the "piano-stool" complexes [(η6-Bip)Ru(II)(en)Cl][PF6] (1, Bip = biphenyl), [(η6-THA)Ru(II)(en)Cl][PF6] (2, THA = 5,8,9,10-tetrahydroanthracene), and [(η6-DHA)Ru(II)(en)Cl][PF6] (3, DHA = 9,10-dihydroanthracene) with guanine derivs., were determined in the solid state by x-ray crystallog., and in solution using 2D [1H,1H] NOESY and [1H,15N] HSQC NMR methods. Strong π–π arene-nucleobase stacking is present in the crystal structures of [(η6-C14H14)Ru(en)(9EtG-N7)][PF6]2·(MeOH) (6) and [(η6-C14H12)Ru(en)(9EtG-N7)][PF6]2·2(MeOH) (7) (9EtG = 9-ethylguanine). The anthracene outer ring (C) stacks over the purine base at distances of 3.45 Å for 6 and 3.31 Å for 7, with dihedral angles of 3.3° and 3.1°, resp. In the crystal structure of [(η6-biphenyl)Ru(en)(9EtG-N7)][PF6]2·(MeOH) (4), there is intermol. stacking between the pendant Ph ring and the purine six-membered ring at a distance of 4.0 Å (dihedral angle 4.5°). This stacking stabilizes a cyclic tetramer structure in the unit cell. The guanosine (Guo) adduct [(η6-biphenyl)Ru(en)(Guo- N7)][PF6]2·3.75(H2O) (5) exhibits intramol. stacking of the pendant Ph ring with the purine five-membered ring (3.8 Å, 23.8°) and intermol. stacking of the purine six-membered ring with an adjacent pendant Ph ring (4.2 Å, 23.0°). These occur alternately giving a columnar-type structure. A syn orientation of arene and purine is present in the crystal structures 5, 6, and 7, while the orientation is anti for 4. However, in solution, a syn orientation predominates for all the biphenyl adducts 4, 5, and the GMP (5'-GMP) adduct 8 [(η6-biphenyl)Ru(II)(en)(5'-GMP-N7)], as revealed by NMR NOE studies. The predominance of the syn orientation both in the solid state and in solution can be attributed to hydrophobic interactions

between the arene and purine rings. There are significant reorientations and conformational changes of the arene ligands in [(η6-arene)Ru(II)(en)(G-N7)] complexes in the solid state, with respect to those of the parent chloro-complexes [(η6-arene)Ru(II)(en)Cl]+. The arene ligands have flexibility through rotation around the arene–Ru π-bonds, propeller twisting for Bip, and hinge-bending for THA and DHA. Thus propeller twisting of Bip decreases by ca. 10° so as to maximize intra- or intermol. stacking with the purine ring, and stacking of THA and DHA with the purine is optimized when their tricyclic ring systems are bent by ca. 30°, which involves increased bending of THA and a flattening of DHA. This flexibility makes simultaneous arene-base stacking and N7-covalent binding compatible. Strong stereospecific intramol. H-bonding between an en NH proton oriented away from the arene (en NH(d)) and the C6 carbonyl of G (G O6) is present in the crystal structures of 4, 5, 6, and 7 (average N···O distance 2.8 Å, N-H···O angle 163°). NMR studies of the 5'-GMP adduct 8 provided evidence that en NH(d) protons are involved in strong H-bonding with the 5'-phosphate and O6 of 5'-GMP. The strong H-bonding from G O6 to en NH(d) protons partly accounts for the high preference for binding of {(η6-arene)Ru(II)en}2+ to G vs. A (adenine). These studies suggest that simultaneous covalent coordination, intercalation, and stereospecific H-bonding can be incorporated into Ru(II) arene complexes to optimize their DNA recognition behavior, and as potential drug design features.

CC 29-13 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 1, 33, 75

IT 336876-16-5
RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)
(arene-nucleobase stacking and stereospecific hydrogen-bonding in guanine adducts of organometallic ruthenium diamine anticancer complexes)

IT 118-00-3, Guanosine, reactions 879-08-3 5550-12-9 421546-04-5 421546-14-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(arene-nucleobase stacking and stereospecific hydrogen-bonding in guanine adducts of organometallic ruthenium diamine anticancer complexes)

IT 336876-16-5
RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)
(arene-nucleobase stacking and stereospecific hydrogen-bonding in guanine adducts of organometallic ruthenium diamine anticancer complexes)

RN 336876-16-5 HCAPLUS

CN Ruthenium(1+), [(1,2,3,4,5,6-η)-1,1'-biphenyl]chloro(1,2-ethanediamine-κN1,κN2)-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

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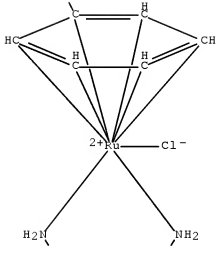
CRN 336876-15-4
CMF C14 H18 Cl N2 Ru
CCI CCS

PAGE 1-A

PAGE 2-A



PAGE 3-A

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

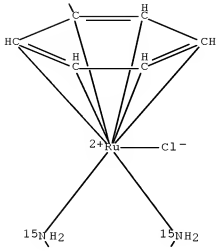
IT 421546-04-5 421546-14-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(arene-nucleobase stacking and stereospecific hydrogen-bonding in guanine adducts of organometallic ruthenium diamine anticancer complexes)
RN 421546-04-5 HCAPLUS
CN Ruthenium(1+), [(1,2,3,4,5,6-η)-1,1'-biphenyl]chloro[1,2-ethanedi(amine-15N)-κN,κN']-, hexafluorophosphate(1-) (9CI)
(CA INDEX NAME)

CM 1

CRN 421546-03-4
CMF C14 H18 Cl N2 Ru
CCI CCS

PAGE 1-A

PAGE 2-A



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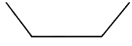


CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

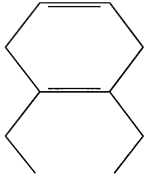
RN 421546-14-7 HCAPLUS
CN Ruthenium(2+), chloro[1,2-ethanedi(amine-15N)-κN,κN'][(5,6,7,8,8a,10a-η)-1,4,9,10-tetrahydroanthracene]-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 421546-13-6

CMF C16 H22 Cl N2 Ru
CCI CCS

PAGE 1-A



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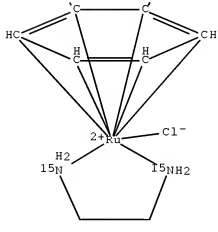

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

REFERENCE COUNT: 107 THERE ARE 107 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L28 ANSWER 32 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2002:31461 HCAPLUS Full-text
DOCUMENT NUMBER: 136:85944
TITLE: Half-sandwich ruthenium(II) compounds comprising heteroatom containing ligands for treatment of cancer
INVENTOR(S): Morris, Robert Edward; Sadler, Peter John; Jodrell, Duncan; Chen, Haimei
PATENT ASSIGNEE(S): University Court, the University of Edinburgh, UK
SOURCE: PCT Int. Appl., 32 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002002572	A1	20020110	WO 2001-GB2824	20010626
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
CA 2414446	A1	20020110	CA 2001-2414446	20010626
EP 1294732	A1	20030326	EP 2001-945472	20010626
EP 1294732	B1	20040818		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
BR 2001012122	A	20030513	BR 2001-12122	20010626
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PT 1294732	T	20041231	PT 2001-945472	20010626
ES 2227225	T3	20050401	ES 2001-945472	20010626
MX 2002012911	A	20040730	MX 2002-12911	20021219
US 20040029852	A1	20040212	US 2003-312940	20030815
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PRIORITY APPLN. INFO.: GB 2000-16052 A 20000630
WO 2001-GB2824 W 20010626

OTHER SOURCE(S): MARPAT 136:85944
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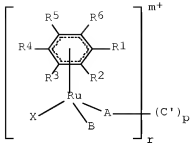


I

AB The preparation of compds. [I; wherein R1 and R2 together with the ring to which they are bound represent a saturated or unsatd. carbocyclic or heterocyclic group; R3, R4, R5, R6, independently = H, alkyl, aryl, alkaryl, or CO2R' (R' = alkyl, aryl, or alkaryl); X = halo, H2O, sulfoxy, carboxy, etc.; A and B, independently = O-donor, N-donor, or S-donor ligands, or halo; C' = (C1-C12)alkylene, optionally substituted in or on the alkylene chain, bound to two A groups; p = 0, 1 and r = 1 when p = 0 and r = 2 when p = 1; m = 0, 1] is described. Thus, 1,4,9,10-tetrahydroanthracene is reacted with RuCl3•3H2O to give 89% [(η6-C14H12)RuCl2]2, which was complexed with ethylenediamine (en) in the presence of NH4PF6 to give 33% [(η6-C14H12)RuCl(en)]+PF6-. Compds. I are useful as antitumor agents, exhibiting IC50 values as high as 315μM against A2780 ovarian cancer cell line. Biol. data are given.

IC ICM C07F015-00
ICS A61K033-24; A61P035-04

CC 29-13 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 1, 63

IT Antitumor agents
(half-sandwich ruthenium compds. comprising heteroatom containing ligands for treatment of cancer)

IT 151654-15-8P 386722-46-9P 386722-48-1P 386722-50-5P
386722-51-6P 386722-53-8P 386722-55-0P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(half-sandwich ruthenium compds. comprising heteroatom containing ligands for treatment of cancer)

IT 386722-46-9P 386722-50-5P 386722-55-0P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(half-sandwich ruthenium compds. comprising heteroatom containing ligands for treatment of cancer)

RN 386722-46-9 HCAPLUS

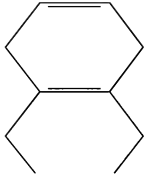
CN Ruthenium(1+), chloro(1,2-ethanediamine-κN1,κN2)[(5,6,7,8,8a,10a-η)-1,4,9,10-tetrahydroanthracene]-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 386722-45-8

CMF C16 H22 Cl N2 Ru
CCI CCS

PAGE 1-A



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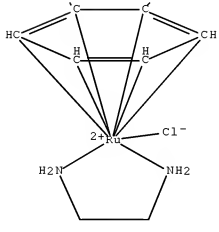

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 386722-50-5 HCAPLUS
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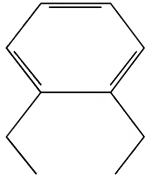
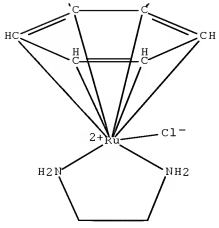
CM 1

CRN 386722-49-2
CMF C16 H20 Cl N2 Ru
CCI CCS

PAGE 1-A





CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 386722-55-0 HCAPLUS
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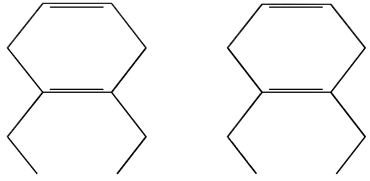
CM 1

CRN 386722-54-9
CMF C38 H54 Cl2 N4 Ru2
CCI CCS

PAGE 1-A



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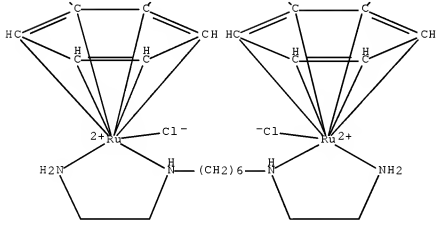


CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L28 ANSWER 33 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2001:719202 HCAPLUS Full-text
DOCUMENT NUMBER: 136:15044
TITLE: Inhibition of Cancer Cell Growth by Ruthenium(II) Arene Complexes
AUTHOR(S): Morris, Robert E.; Aird, Rhona E.; Murdoch, Piedad del Socorro; Chen, Haimei; Cummings, Jeff; Hughes, Nathan D.; Parsons, Simon; Parkin, Andrew; Boyd, Gary; Jodrell, Duncan I.; Sadler, Peter J.
CORPORATE SOURCE: Department of Chemistry, University of Edinburgh, Edinburgh, EH9 3JJ, UK
SOURCE: Journal of Medicinal Chemistry (2001), 44(22), 3616-3621
CODEN: JMCMAR; ISSN: 0022-2623
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Inhibition of the growth of the human ovarian cancer cell line A2780 by organometallic ruthenium(II) complexes of the type [(η6-arene)Ru(X)(Y)(Z)], where arene is benzene or substituted benzene, X, Y, and Z are halide, acetonitrile, or isonicotinamide, or X,Y is ethylenediamine (en) or N-ethylethylenediamine, has been investigated. The x-ray crystal structures of the complexes [(η6-p-cymene)Ru(en)Cl]PF6 (I), [(η6-p-cymene)RuCl2(isonicotinamide)], and [(η6-biphenyl)Ru(en)Cl]PF6 are reported. They have "piano stool" geometries with η6 coordination of the arene ligand. Complexes with X,Y as a chelated en ligand and Z as a monofunctional leaving group had the highest activity. Some complexes were as active as carboplatin. Hydrolysis of the reactive Ru-Cl bond in I was detected by HPLC but was suppressed by the addition of chloride ions. I binds strongly and selectively to G bases on DNA oligonucleotides to form monofunctional adducts. No inhibition of topoisomerase I or II by complex I was detected. These chelated Ru(II) arene complexes have potential as novel metal-based anticancer agents with a mechanism of action different from that of the Ru(III) complex currently on clin. trial.

CC 1-6 (Pharmacology)
Section cross-reference(s): 29, 75

IT Antitumor agents
(ovary; preparation of ruthenium(II) arene complexes and inhibition of cancer cell growth)

IT 336876-05-2P 336876-10-9P 336876-16-5P
RL: PAC (Pharmacological activity); PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(crystal structure; preparation of ruthenium(II) arene complexes and inhibition of cancer cell growth)

IT 7440-18-8DP, Ruthenium, arene complexes 75701-00-7P

209854-78-4P 336875-96-8P 336876-02-9P 336876-08-5P
336876-13-8P 377759-82-5P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation);
THU (Therapeutic use); BIOL (Biological study); PREP
(Preparation); USES (Uses)
(preparation of ruthenium(II) arene complexes and inhibition of
cancer cell growth)

IT 336876-05-2P 336876-16-5P
RL: PAC (Pharmacological activity); PRP (Properties); SPN
(Synthetic preparation); THU (Therapeutic use); BIOL (Biological
study); PREP (Preparation); USES (Uses)
(crystal structure; preparation of ruthenium(II) arene complexes and
inhibition of cancer cell growth)

RN 336876-05-2 HCAPLUS

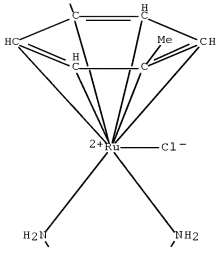
CN Ruthenium(1+), chloro(1,2-ethanediamine-κN1,κN2)[(1,2,3,4,5,6-
η)-1-methyl-4-(1-methylethyl)benzene]-, hexafluorophosphate(1-) (1:1)
(CA INDEX NAME)

CM 1

CRN 65684-77-7
CMF C12 H22 Cl N2 Ru
CCI CCS

PAGE 1-A

PAGE 2-A



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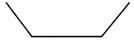

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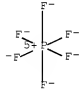
CRN 16919-18-9
CMF F6 P
CCI CCS



RN 336876-16-5 HCAPLUS
CN Ruthenium(1+), [(1,2,3,4,5,6-η)-1,1'-biphenyl]chloro(1,2-ethanediamine-κN1,κN2)-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

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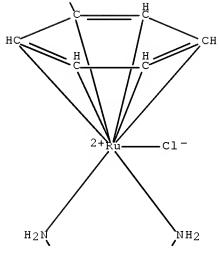
CRN 336876-15-4
CMF C14 H18 Cl N2 Ru

CCI CCS

PAGE 1-A

Ph

PAGE 2-A



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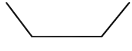

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

IT 75701-00-7P 336876-02-9P 336876-08-5P
336876-19-8P 377759-82-5P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of ruthenium(II) arene complexes and inhibition of cancer cell growth)

RN 75701-00-7 HCAPLUS

CN Ruthenium(1+), (η6-benzene)chloro(1,2-ethanediamine-κN1,κN2)-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

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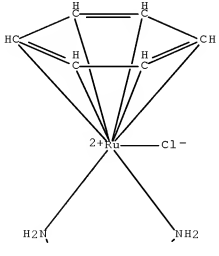
CRN 65684-75-5
CMF C8 H14 Cl N2 Ru
CCI CCS

PAGE 1-A



PAGE 2-A

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 336876-02-9 HCAPLUS
CN Ruthenium(1+), (η6-benzene)(1,2-ethanediamine-κN,κN')iodo-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

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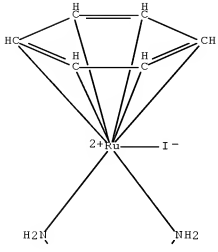
CRN 336876-01-8
CMF C8 H14 I N2 Ru
CCI CCS

PAGE 1-A



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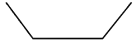

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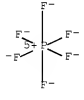
CMF F6 P
CCI CCS



RN 336876-08-5 HCAPLUS
CN Ruthenium(1+), (1,2-ethanediamine-κN,κN')iodo[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

CM 1

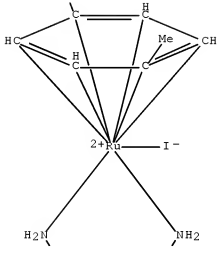
CRN 336876-07-4

CMF C12 H22 I N2 Ru
CCI CCS

PAGE 1-A

i-Pr

PAGE 2-A



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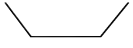


CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 336876-19-8 HCAPLUS
CN Ruthenium(1+), [(1,2,3,4,5,6-η)-1,1'-biphenyl]chloro(N-ethyl-1,2-ethanediamine-κN,κN')-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

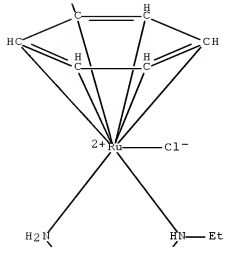
CM 1

CRN 336876-18-7
CMF C16 H22 Cl N2 Ru
CCI CCS

PAGE 1-A

Ph

PAGE 2-A



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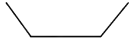

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 377759-82-5 HCAPLUS
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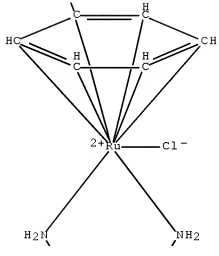
CRN 377759-81-4

CMF C10 H16 Cl N2 O2 Ru
CCI CCS

PAGE 1-A

PAGE 2-A



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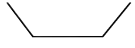

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L28 ANSWER 34 OF 34 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2001:319903 HCAPLUS Full-text
DOCUMENT NUMBER: 134:326632
TITLE: Half-sandwich ruthenium(II) compounds comprising nitrogen containing ligands for treatment of cancer
INVENTOR(S): Morris, Robert Edward; Sadler, Peter John; Chen, Haimei; Jodrell, Duncan
PATENT ASSIGNEE(S): The University Court, the University of Edinburgh, UK
SOURCE: PCT Int. Appl., 36 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001030790	A1	20010503	WO 2000-GB4144	20001026
W: JP, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 1224192	A1	20020724	EP 2000-971599	20001026
EP 1224192	B1	20050831		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY				
JP 2003512471	T	20030402	JP 2001-533142	20001026
AT 303393	T	20050915	AT 2000-971599	20001026
ES 2248136	T3	20060316	ES 2000-971599	20001026
US 20030023088	A1	20030130	US 2002-134404	20020426
US 6750251	B2	20040615		
US 20040220166	A1	20041104	US 2004-848416	20040518
US 6979681	B2	20051227		
US 20050239765	A1	20051027	US 2005-165372	20050623

PRIORITY APPLN. INFO.: GB 1999-25274 A 19991027
GB 2000-16054 A 20000630

WO 2000-GB4144	W	20001026
US 2002-134404	A1	20020426
US 2004-848416	A1	20040518

OTHER SOURCE(S): MARPAT 134:326632

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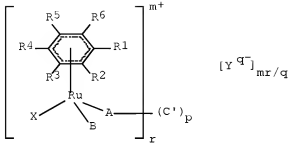


I

AB Title compds. I (R1, R2, R3, R4, R5, R6 = H, alkyl, -CO2R', aryl, alkylaryl, which latter two groups are optionally substituted on the aromatic ring; R' = alkyl, aryl, alkaryl; X = halo, H2O, (R')(R'')SO, R'CO2-, (R')(R'')C:O, R'' = alkyl, aryl, alkaryl; Y = counterion; m = 0-1; q = 1-3; C' = C1-12 alkylene, optionally substituted in or on the alkylene chain, bound to two A groups; p = 0-1 and r = 1 when p is 0 and r is 2 when p is 1; and A and B are: each independently N-donor nitrile ligands; or B is halo and A is an N-donor pyridine ligand, optionally substituted at one or more of the carbon atoms of the pyridine ring; or p is 0, A is NR7R8 and B is NR9R10, wherein R7, R8, R9 and R10 independently represent H or alkyl, and A and B are linked by an alkylene chain, optionally substituted in or on the alkylene chain; or p is 1, A is NR7 and B is NR9R10, wherein R7, R9 and R10 are as previously defined, and A and B are linked by an alkylene chain, optionally substituted) were prepared which may be used in the treatment and/or prevention of cancer.

IC ICM C07F015-00
ICS A61K033-24; A61P035-00

CC 29-13 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 1

IT Antitumor agents
(preparation of half-sandwich ruthenium compds. comprising nitrogen containing
ligands for treatment of cancer)

IT 75701-00-7P 209854-78-4P 336875-96-8P 336876-02-9P
336876-05-2P 336876-08-5P 336876-10-9P
336876-13-2P 336876-16-5P 336876-19-8P
336876-22-3P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of half-sandwich ruthenium compds. comprising nitrogen containing
ligands for treatment of cancer)

IT 75701-00-7P 336876-02-9P 336876-05-2P
336876-08-5P 336876-13-2P 336876-16-5P

336876-19-8P 336876-22-3P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of half-sandwich ruthenium compds. comprising nitrogen containing ligands for treatment of cancer)

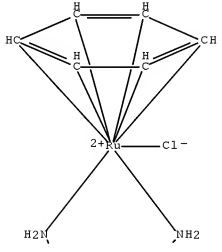
RN 75701-00-7 HCAPLUS

CN Ruthenium(1+), (η6-benzene)chloro(1,2-ethanediamine-κN1,κN2)-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 65684-75-5
CMF C8 H14 Cl N2 Ru
CCI CCS

PAGE 1-A



PAGE 2-A

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 336876-02-9 HCAPLUS
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CCI CCS

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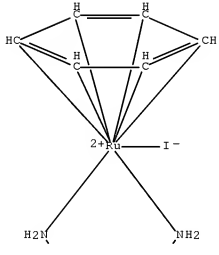

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CM 2

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CMF F6 P
CCI CCS

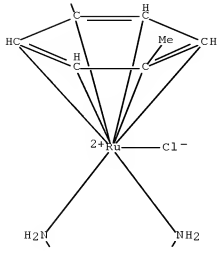
RN 336876-05-2 HCAPLUS
CN Ruthenium(1+), chloro(1,2-ethanediamine-κN1,κN2)[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 65684-77-7
CMF C12 H22 Cl N2 Ru
CCI CCS

PAGE 1-A

PAGE 2-A



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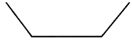


CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 336876-08-5 HCAPLUS
CN Ruthenium(1+), (1,2-ethanediamine-κN,κN')iodo[(1,2,3,4,5,6-η)-1-methyl-4-(1-methylethyl)benzene]-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

CM 1

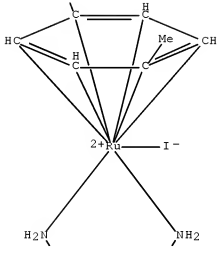
CRN 336876-07-4

CMF C12 H22 I N2 Ru
CCI CCS

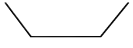
PAGE 1-A

i-Pr

PAGE 2-A



PAGE 3-A



CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 336876-13-2 HCAPLUS
CN Ruthenium(1+), (1,2-ethanediamine-κN,κN')iodo[(1,2,3,4,5,6-η)-methyl benzoate]-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 336876-12-1
CMF C10 H16 I N2 O2 Ru
CCI CCS

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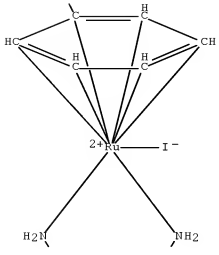

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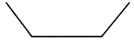
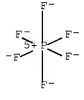


CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS



RN 336876-16-5 HCAPLUS
CN Ruthenium(1+), [(1,2,3,4,5,6-η)-1,1'-biphenyl]chloro(1,2-ethanediamine-κN1,κN2)-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 336876-15-4
CMF C14 H18 Cl N2 Ru

CCI CCS

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Ph

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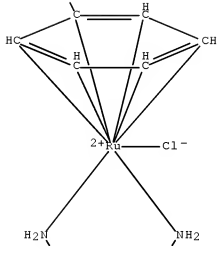

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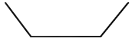

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

RN 336876-19-8 HCAPLUS
CN Ruthenium(1+), [(1,2,3,4,5,6-η)-1,1'-biphenyl]chloro(N-ethyl-1,2-ethanediamine-κN,κN')-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 336876-18-7
CMF C16 H22 Cl N2 Ru
CCI CCS

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Ph

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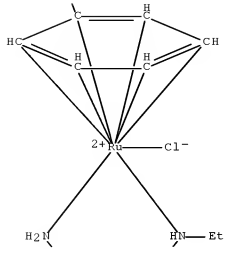

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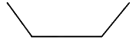
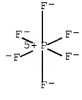


CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS



RN 336876-22-3 HCAPLUS
CN Ruthenium(2+), bis[(1,2,3,4,5,6-η)-1,1'-biphenyl][μ-[N,N'-bis[2-(amino-κN)ethyl]-1,6-hexanediamine-κN:κN']]dichlorodi-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 336876-21-2

CMF C34 H46 Cl2 N4 Ru2
CCI CCS

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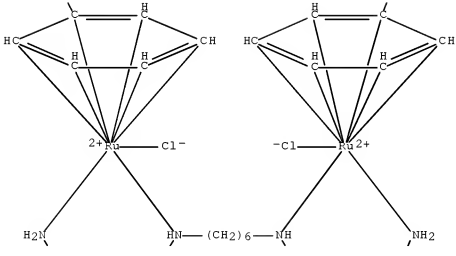

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CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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L1 STR
L2 STR L1
L3 STR L2
L4 2 SEA SSS SAM L3
D SCA
L5 STR L3
L6 24 SEA SSS SAM L5
L7 STR L5
L8 24 SEA SSS SAM L7
L9 2578 SEA SSS FUL L7
L10 STR L1
L11 11 SEA SUB=L9 SSS FUL L10
L12 STR L1
L13 50 SEA SUB=L9 SSS SAM L12
L14 1620 SEA SUB=L9 SSS FUL L12
L15 1629 SEA SPE=ON ABB=ON PLU=ON L14 OR L11
L16 STR L1
L17 1207 SEA SUB=L9 SSS FUL L16
L18 892 SEA SPE=ON ABB=ON PLU=ON L15 AND L17

FILE 'CAPLUS' ENTERED AT 14:38:14 ON 06 FEB 2009
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L20 1 SEA SPE=ON ABB=ON PLU=ON US200!-520239/APPS
L21 1 SEA SPE=ON ABB=ON PLU=ON L20 AND L19
L22 21 SEA SPE=ON ABB=ON PLU=ON L18(L)(BAC OR DMA OR PAC OR PKT OR THU)/RL

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E ANTITUMOR AGENTS+ALL

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              E ANTITUMOR AGENTS+ALL/CT
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L24           20 SEA SPE=ON  ABB=ON  PLU=ON  L23 AND L22
L25            1 SEA SPE=ON  ABB=ON  PLU=ON  L24 AND L20
L26           32 SEA SPE=ON  ABB=ON  PLU=ON  L18(L)(?TUMOR? OR ?TUMOUR? OR
                 ?CANCER? OR ?CARCIN? OR ?NEOPLAS?)
L27           32 SEA SPE=ON  ABB=ON  PLU=ON  L18(L)(?TUMOR? OR ?TUMOUR? OR
                 ?CANCER? OR ?CARCIN? OR ?NEOPLAS? OR ?CARCIN?)
L28           34 SEA SPE=ON  ABB=ON  PLU=ON  L27 OR L24

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              D L28 IBIB ABS HITIND HITSTR TOT
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